

PARAMETRIC RECIPE TABLES

Best Bets for

Stocks	2-296–297
Stock Aromatics	2-298
Broths	2-304–305
Infused Liquids	2-310
Lowering pH	2-314
Adding Flavor with Alcohol	2-317
Using Essences and Extracts in Cooking	2-325
Extracts	2-326
Infused Fats	2-329
Jus	2-344–345
Consommé	2-374–375
Vegetable and Fruit Purees	2-425
Freeze-Drying	2-451
Tartares	3-63
Cooking Tender Meats Sous Vide	3-96
Cooking Tender Red Poultry Sous Vide	3-99
Cooking Tender White Poultry Sous Vide	3-99
Cooking Fish Sous Vide	3-102
Cooking Tender Shellfish Sous Vide	3-103
Cooking Tough Poultry	3-108
Cooking Tough Shellfish	3-108
Cooking Tough Cuts	3-109
Cooking Tough Offal Sous Vide	3-146
Cooking Tender Organ Meats Sous Vide	3-146
Brines	3-168
Wet Cures	3-169
Dry Rubs	3-169
Brining	3-172
Curing	3-172
Smoking Meats and Seafood	3-210
Burgers	3-234
Coarse-Ground Sausages	3-236–237
Emulsion-Style Sausages	3-238–239
Fermented Sausages	3-244–245
Gas-Ripened Fruit	3-285
Cooking Fruits Sous Vide Until Tender	3-288
Cooking Vegetables Sous Vide Until Tender	3-289
Cooking Fruits or Vegetables Sous Vide for Purees	3-290
Cooking Fruits Sous Vide in Sugar Syrup Until Tender	3-291
Cooking Vegetables Sous Vide with Fat Until Tender	3-292
Warming Vegetables Sous Vide	3-292
Blanching Sous Vide	3-293
Potato Purees	3-297
Pressure-Cooking Plant Foods	3-300
Risotto	3-305
Microwaving Vegetables	3-311
Naked Frying	3-320
Fried Fruit and Vegetable Chips	3-328
Batters	3-333
Preservation	3-348
Heat-Treated Fruit	3-359
Smoked Plant Foods	3-362
Dehydration	3-366
Freeze-Drying Plant Foods	3-372
Pasta Doughs	3-381
Compressing or Impregnating Produce	3-390

Thickening with Natural Starch	4-28
Thickening with Modified Starch	4-30
Thickening Cold Liquids	4-46
Thickening Hot Liquids	4-47
Making Milks and Creams	4-56
Edible Films	4-60
Cooking Whole Eggs	4-78
Pickled and Preserved Eggs	4-82
Separated Egg Gels	4-85
Blended Egg Gels	4-92
Smoking Dairy and Eggs	4-100
Protein Curds	4-104
Gelling with Transglutaminase (Activa)	4-116
Cold Gels	4-140–141
Firm Coating Gels	4-151
Hot Gels	4-160
Hot Fruit Gels	4-165
Methylcellulose Gels	4-171
Fluid Gels	4-177
Spherification	4-187
Constructed Cheeses	4-223
Airs, Bubbles, and Froths	4-264
Light Foams	4-270
Thick, Fine-Textured Foams	4-278–279
Set Foams	4-288–289
Puffed Snacks	4-302

STRATEGIES TABLES

Cooking in CVap Ovens and Combi Ovens	2-170–171
Using a Microwave Oven	2-185
Sous Vide Cooking Strategies	2-204–205
Water Bath Strategies for Cooking Sous Vide	2-244
Cooling Sous Vide	2-255
Freezing Sous Vide	2-259
Thawing Sous Vide	2-263
Searing After Sous Vide	2-270–275
Juicing	2-336–337
Thickening Sauces, Jus, and Glazes	2-346
Filtering Liquids and Clarifying Consommés	2-352
Concentrating	2-379
Grinding, Milling, and Pureeing	2-400
Drying	2-430
Cooking with Liquid Nitrogen	2-459
Rendering Fats	3-145
Marinating	3-192
Making Emulsions	4-208–209
Creating Foams	4-258–260

Page references of the form 4-381 refer to volume 4, page 381

STEP-BY-STEP PROCEDURES

HOW TO

- Wash Your Hands Properly 1-198–199
- Read the Phase Diagram of Water 1-302–303
- Make Exceptional Ice Cream with Liquid Nitrogen 1-311
- Supercool Water..... 1-312
- Measure Relative Humidity 1-322
- Read a Psychrometric Chart 1-323
- Find the Sweet Spot..... 2-16–17
- Calculate the Sweet Zone of Your Broiler..... 2-22–23
- Make Your Electric Broiler Perform Like a Wood-Fired Oven 2-26–27
- Season a Wok or Frying Pan..... 2-53
- Pack Food in Canning Jars 2-78
- Sterilize Acidic Canned Foods in Boiling Water 2-81
- Use a Pressure Canner..... 2-89
- Braise or Pot-Roast Meat..... 2-99
- Make Bacon and Eggs in a Combi Oven 2-174–175
- Roast a Chicken in a Combi Oven 2-178–179
- Vacuum Pack Food with a Chamber Sealer 2-218–221
- Vacuum Pack Food with an Edge Sealer 2-224
- Cook in a Bath Set to Final Temperature 2-246
- Cook in a Bath Set Hotter Than Final Temperature 2-246
- Cook in Multiple Baths 2-248–249
- Freeze Food in a Salty Brine 2-260
- Pressure-Cook Stock 2-293
- Make Stocks: Basic, White, Shellfish, or Rich Brown..... 2-297
- Make Stock Sous Vide 2-302
- Wash Citrus Oil 2-321
- Extract Juice from Plants with Pectinase 2-336
- Extract Juice by Osmosis or Freezing..... 2-336, 337
- Keep Fresh-Squeezed Juice Fresh..... 2-339
- Clarify Juice with a Buon Vino Pressure Filter..... 2-355
- Vacuum Filter..... 2-357
- Balance a Centrifuge..... 2-363
- Separate Liquids by Centrifuging..... 2-364
- Separate Fresh Butterfat from Cream..... 2-366
- Filter with Gelatin Ice 2-370–371
- Clarify Liquids with Agar 2-372–373
- Reduce Juice in a Vacuum 2-381
- Distill with a Rotavap 2-388
- Freeze Concentrate..... 2-397
- Mill a Creamy Nut Butter..... 2-418–419
- Use a Spray Dryer 2-442
- Cryopoach in Liquid Nitrogen or Oil 2-460
- Cryograte and Cryopowder 2-461
- Disassemble Fruit with Liquid Nitrogen 2-462
- Cryoshape and Cryoshatter 2-463
- Carbonate a Liquid..... 2-468
- Carbonate Fruit 2-469
- Preserve the Freshness of Truffles..... 2-470–471
- Carbonate Fruit with Dry Ice 2-472
- Kill Fish with the *Ike Jime* Method 3-38
- Dry-Age Meat..... 3-42
- Seam-Cut a Lamb Leg 3-46
- Dissect a Pork Shoulder 3-48–49
- Block Tuna 3-54–55
- Prepare Tender Squid..... 3-56
- Fillet a Flatfish 3-57
- Prepare Abalone..... 3-58–59
- Slice Fish for Nigiri-zushi..... 3-60
- Flash-Cook Sushi with Hot Oil, a Torch, or a Broiler..... 3-61
- Cryoshatter for Tartare..... 3-64
- Precook Duck Skin 3-82
- Cook the Perfect Hamburger Sous Vide 3-86
- Pressure-Cook Tough Cuts for Quick Results..... 3-114
- Cryosear a Duck Breast 3-124–125
- Puff the Skin on a Pork Roast 3-125–126
- Cook Crispy Fish Skin and Make Fish Skin Pillows 3-130–131
- Brine or Wet-Cure Meat: Equilibrium Method..... 3-170–171
- Speed Brine or Wet-Cure by Injection or Vacuum..... 3-174–175
- Vacuum Tumble 3-175
- Pressure Marinate 3-207
- Pack and Light Your Smoke Gun 3-214
- Grind Meat and Fat 3-228
- Form and Finish a Sausage 3-240–241
- Ferment Sous Vide 3-245
- Choose and Use Activa 3-254–256
- Rejoin Seam-Boned Cuts 3-255
- Make a Leaner Rack of Lamb 3-255
- Bond with the Slurry Method..... 3-256
- Reconstruct a Whole Fish..... 3-256
- Ripen on Command 3-285
- Blanch Sous Vide 3-293
- Make the Ultimate French Fry 3-322
- Measure Thickeners 4-23
- Disperse a Thickener..... 4-24–25
- Hydrate a Thickener..... 4-26
- Peel an Egg with Liquid Nitrogen 4-78
- Make a Perfect Soft-Boiled Egg 4-79
- Use Ion-Coagulating Gels 4-129
- Use a Sequestrant..... 4-129
- Cast Gels 4-132
- Mold Gels and Suspend Solids in Gels 4-133
- Cast Thick Gel Sheets and Make Gel “Linguine” 4-134
- Mold and Freeze Gel Spheres 4-135
- Make Firm Gel Beads and Droplets 4-136–137
- Extrude Gel Noodles..... 4-138–139
- Quick-Set a Fluid Gel and Make a Coarse Fluid Gel 4-179
- Suspend a Solid in a Gelled Sphere 4-187
- Create Reverse Spherification 4-187
- Make Clarified and Brown Butter 4-213
- Make Edible Prune Coals..... 4-314–315
- Set Up a Triangle Test 4-336
- Hyperdecant Wine..... 4-343
- Taste Coffee Like a Pro 4-365
- Use a Brewing Control Chart 4-366–367
- Grind Beans for Espresso 4-377
- Groom a Portafilter 4-381
- Tamp Evenly..... 4-382
- Pull an Espresso Shot 4-386–387
- Steam Milk 4-390
- Make Latte Art..... 4-394–395
- Clean an Espresso Machine 4-397

INDEX

A

- A&P grocery stores, innovations of, 1-21
- abalones
- Abalone and Foie Gras Shabu-Shabu with Yuba and Enoki, 5-197, 203
 - biology of, 3-26, 27
 - cooking sous vide, parametric recipe for, 3-108
 - Japanese cutting of, 3-52
 - preparing, how to, 3-58–59
- absolutes, from concretes or oleoresins, 2-320
- absorption
- by graybodies, 1-286
 - of radiation, 1-285
- Abu I-Hasan “Ali Ibn Nafi,” 1-10
- AccuSteam Griddle, 2-41, 158
- acetaldehyde, citrus flavor and, 5-149
- acetic acid. *See* vinegar
- Achatz, Grant
- Bacon Chips with Butterscotch, Apple, and Thyme recipe, 3-189
 - Bacon Powder Squares recipe, 4-34
 - biography of, 1-68
 - on copying dishes, 1-71
 - critics on, 1-63
 - on dehydrating fruits and vegetables, 3-366
 - Eggs Benedict recipe, 4-86
 - on elBulli meal, 1-38–39
 - Modernist cuisine and, 1-52, 62, 67
 - Mozzarella Balloons recipe, 4-110–111
 - Pineapple Glass recipe, 3-370
 - Shrimp Cocktail recipe, 3-107
 - Steingarten on, 1-65
 - Trotter and, 1-69
 - Umami Seasoning Fluid Gel recipe, 4-183
 - Vanilla Olive Oil Powder recipe, 4-35
- acidifiers
- buffering and, 2-315
 - example recipes for, 2-315
 - parametric recipe for, 2-314–315
- acidity of food. *See also* pH
- boiling-water sterilization of canned foods and, 2-81
 - canning method and, 2-76
 - pressure-canning and, 2-85–91
 - USDA canning guidelines and, 2-79–80
- acids or acidic compounds. *See also* pH; *specific compounds*
- as acidifiers, 2-314–315
 - for marinating, 3-190, 192–193
 - pH and, 3-194
 - plant food cooking and, 3-276, 278
 - protein gelling and, 4-70
- acidulants, thickening with, 4-13
- acorn squash, cooking sous vide, parametric recipe for, 3-289
- acrolein, in reused deep-frying oil, 2-124, 125
- acrylamide
- as Maillard reaction product, 1-220
 - in reused deep-frying oil, 2-125
- actin, in muscle, 3-6
- Activa, 3-250–256
- characteristics of, 3-250–252
 - choosing and using, how to, 3-254–256
 - for fish skin pillows, 3-131
 - forms of, 3-252, 253
 - gelling with, best bets for, 4-116–117
 - meat purees and, 3-233
 - molding sausage with, 3-241
 - production process for, 1-257
 - properties and uses of, 3-253
 - reattaching cooked skin to meat with, 3-122
 - rejoining seam-boned cuts with, 3-255
 - as sausage binder, 3-223
 - slurry method of applying, 3-256
- Activia (probiotic yogurt), 3-252
- additives. *See also* preservatives
- to centrifuged liquids, 2-368
 - fresh juice taste and color and, 2-338, 339
 - popular perception of, 1-250
 - public scandals involving, 1-252–254
- adhesives, for breading, 3-338
- Adler, Alan, 4-370
- adrenaline, slaughterhouse practices and, 3-34
- Adrià, Albert, 1-35, 2-369, 4-37
- Adrià, Ferran
- Achatz’s meals at elBulli and, 1-38–39
 - aesthetics of nature in dishes of, 4-37
 - Agar Carbonara recipe, 4-161
 - Beet Meringue recipe, 4-295
 - Black Olive Puree recipe, 4-230
 - Black Sesame Rice Crisps recipe, 4-304
 - Blood Orange Foam recipe, 4-272
 - books by, 1-35–36, 59
 - Cappuccino Foam recipe, 4-266
 - as Catalan/Spanish chef, 1-258
 - Cauliflower Couscous of, 3-388
 - Corn Foam recipe, 4-273
 - creativity of, 1-71
 - Crimini in Amber recipe, 4-154
 - critics on, 1-62, 63
 - on dining as dialogue, 1-37–38
 - fast hot-spring quail eggs and, 4-78
 - foams and, 4-264, 281
 - foams pioneered by, 1-36, 4-244–245, 254, 255
 - Freeze-Dried Carrot Foam recipe, 4-300
 - future of, 1-35
 - Ham Consommé with Melon Beads recipe, 4-48
- Adrià, Ferran (*continued*)
- hired at elBulli, 1-33–34
 - homemade sodas by, 4-239
 - hot and cold pea soup of, 4-176
 - Hot Apricot Marshmallow recipe, 4-293
 - Hot Butter Foam recipe, 4-283
 - Hot Egg Mayonnaise recipe, 4-227
 - innovations of, 1-5, 36
 - intellectually motivated cuisine of, 1-52
 - liquid nitrogen and, 1-62, 64, 65
 - Liquid Pimento Olive recipe, 4-193
 - McGee on experiments by, 1-46
 - Melon Caviar recipe, 4-189
 - Microwaved Pistachio Sponge Cake recipe, 4-294
 - on misleading appearance of creations, 5-60
 - Modernist cuisine and, 1-57
 - Mussels in Mussel Juice Spheres recipe, 4-191
 - Osso Bucco Milanese recipe, 5-60–65
 - Oysters with Mignonette Air recipe, 4-265
 - pacotized powders by, 2-407
 - Parmesan Nuggets recipe, 4-35
 - on potato purees, 3-296
 - on quail eggs, cooking whole, 4-75
 - Shellfish Custard recipe, 4-162
 - Soy Sauce Cloud recipe, 4-299
 - on spherification, 4-184
 - spherification developed by, 5-256
 - spherified olives of, 4-126
 - Squid-Ink Bean-Sprout Risotto recipe, 3-397
 - Steingarten on, 1-65
 - Sweet Pea Clusters recipe, 4-173
 - on technoemotional cuisine, 1-57
 - Thickened Oil recipe, 4-230
 - Two-Meter Parmesan Spaghetti recipe, 4-143
 - worldwide fame of, 1-38–40
- adsorption, 2-138, 4-13
- Aduriz, Andoni Luis
- aesthetics of nature in dishes of, 4-37
 - Clay Potatoes recipe, 3-398
 - compression and, 5-285
 - Edible Bar Soap with Honey Bubbles recipe, 4-267
 - foams and, 4-264
 - Foie Gras Soup with Bomba Rice and Sea Lettuce recipe, 3-149
 - Fossilized Salsify Branch recipe, 3-399
 - Green Pea Pods with Citrus Infusion and Walnut Oil recipe, 4-171
 - on hepatic steatosis and foie gras, 3-139
 - Idiazábal Gnocchi recipe, 4-123
 - “Into the Vegetable Garden” and, 3-294
 - Modernist cuisine and, 1-57
- Aduriz, Andoni Luis (*continued*)
- Monkfish with Constructed Skin recipe, 3-132
 - Quinoa and Idiazábal with Bonito Stock Veil recipe, 4-168
 - Sweet Pea Clusters recipe, 4-173
 - Vegetable Coals recipe, 3-375
 - Watermelon Meat recipe, 3-394
- Aerated Chocolate, 4-313
- Aerated Coffee Ice Cream, 4-312
- Aerated Foie Gras, 4-311
- Aerated Gruyère, 4-312
- Aerated Mango Sorbet, 4-311
- aerating wands, 4-391. *See also* handheld whipping wands; steam wands
- aeration, vacuum-assisted, 2-214
- Aero candy, 4-254, 312
- aerobic bacteria, 1-130, 135–136
- vacuum packing and, 2-208
- aerobic endurance, slow-twitch muscle fibers and, 3-14, 22–23
- aerogels, history of, 4-72
- Aerolatte milk frother, foam forming with, 4-258, 260
- AeroPress coffee brewer, 4-370
- Africa, ingredients imported to, 1-15
- agar
- clarifying liquids with, 2-372–373
 - for cold gels, parametric recipe for, 4-140
 - for edible films, parametric recipe for, 4-60
 - as emulsion stabilizer, 4-215
 - filtration with, 2-352
 - for fluid gels, 4-176
 - parametric recipe for, 4-177
 - as foam stabilizer, 4-257
 - French chefs’ use of, 4-128
 - fruit juice gels and, 3-195
 - gel filtration with, 2-369
 - as gelling agent, 4-68
 - for hot fruit gels, parametric recipe for, 4-165
 - for hot gels, parametric recipe for, 4-160
 - interactions with other thickeners, 4-44–45
 - for light foams, parametric recipe for, 4-270
 - natural sources for, 1-253
 - product guide for, 4-II–III
 - properties and uses of, 4-42–43
 - for thick foams, parametric recipe for, 4-278–279
 - thickening sauces, jus, or glazes with, 2-346
- Agar Carbonara, 4-161
- Aged Rare Beef Jus, 5-5, 6
- aging
- of coffee beans, 4-358
 - of Dover sole for sole meunière, 3-40
 - of meats
 - enzymes and, 3-39, 41, 78

- aging (*continued*)
 holding at specific temperature and, 2.247–248
 sous vide technique of, 2.250
 of wine
 screw tops for wine bottles and, 4.344
 storage conditions for, 4.345–348
- agricultural science, food science and, 1.48
- agriculture, early civilization and development of, 1.6–7
- AGS (Anderson, Greenville, Spartanburg) vacuum packing system, 1.40–41
- air. *See also* drying; relative humidity
 ambient, for thawing, 2.263
 in carbon dioxide containers, 2.464
 as foaming gas, 4.254
 in ovens, heat conduction by, 2.102
 pressure-canning and, physics of, 2.87
 warm, drying with, 2.431–433
 water vapor in, 1.319–321, 325
- L’Air du Temps, 1.70
- air pockets, sausage stuffing and, 3.227, 230
- air pumps, aquarium
 foam forming with, 4.258, 260
 for sous vide cooking, 2.240–241
- airs
 best bets for, 4.264
 example recipes for, 4.265
 parametric recipe for, 4.264
- Ajinomoto Company, 1.213, 3.251
- Al Sorriso, 1.28
- Alajmo, Max and Raf, 1.70
- albedo, of radiation, 1.285
- albumin, as fining agent, 2.360
- albumin powder
 for bubbles, parametric recipe for, 4.264
 for light foams, parametric recipe for, 4.270
 for set foams, parametric recipe for, 4.288–289
 for thick foams, parametric recipe for, 4.278–279
- alcohol (ethanol). *See also* spirits; *specific alcoholic beverages*
 in batters, 3.316
 coffee brewing in, 4.371
 dissolving in water, 1.296
 distillation of, 2.384, 390
 drying with, 2.430
 extracting flavor with
 best bets for, 2.326
 example recipes for, 2.327
 fat washing using, 2.320, 321
 as foam inhibitor, 4.257
 gelatin gels with, 4-IV
 hydrogen bonds in water vs., 1.314
 laws on production of, 1.94
 for marinating, 3.195, 198
 moisture absorbed by, 2.428
 phase diagram of, 1.303
 as polar solvent, 1.330
 seasoning with, 2.317
 separating water from, 2.384, 390
 solubility in water of, 1.332
 as solvent for tasant extraction, 2.320
 vacuum packing and, 2.213, 214
- alcohol (ethanol) (*continued*)
 vacuum pressure vs. boiling point of, 2.391
- alcohols, as by-products of ethanol distillation, 2.384
- alcohol sanitizers, 1.200
- alcoholic fermentation, 3.346
- Alexander, Alexander, 4.40
- Alexander the Great, 1.12
- alginate. *See also* propylene glycol
 alginate; sodium alginate
 fat incorporation into sausage with, 3.225
 interactions with other thickeners, 4.44–45
 as ion-based coagulant, 4.124, 127, 129
 natural sources for, 1.253
 production process for, 1.257
 properties and uses of, 4.42–43
 as sausage binder, 3.223
 spherification using, 4.184
 thickening with, parametric recipe for, 4.46, 47
 uses of, surprising, 4.127
- Aligoté wine, 4.327
- Alinea, 1.67, 68. *See also* Achatz, Grant
- alkali earth metals, 4.126
- alkaline marinades, 3.190, 194–195
 pH and, 3.194
- alkaline ramen pasta, parametric recipe for, 3.381
- Alléno, Yannick, Venison Loin Rossini recipe, 3.98
- allergies, to foods, 1.238–239
- almonds
 Almond Polenta, 4.36
 bitter, cyanide aroma and, 3.262
 Garlic Nougatine, 5.25, 29
 Marcona Almond Butter Paste, 5.281, 282
 Toasted Almond Milk, 4.59
- almond milk, parametric recipe for, 4.56
- Almond Polenta, 4.36
- Alsatian Munster Sausage, 5.35, 39
- altitude
 baking and, 2.113
 boiling point and, 1.318
- aluminum cookware
 conduction in, 1.280
 heat capacity of, 1.278
- aluminum foil, in grills, 2.15
- l’Amador, 1.70
- Amador, Juan, 1.70
- amebiasis, 1.119, 129
- American Association of Wine Economists, 4.335
- American BBQ-plated-dish recipe, 5.66–79
- The American Cheese Slice, 4.224
- American Dietetic Association, 1.215
- American Heart Association, 1.224
- An American Place, 1.28, 29
- American Spice Trade Association, 3.270
- American Wagyu Beef Cheek, 5.55, 57
- American espresso, 4.393
- amino acids
 in freshly slaughtered meat, 3.34
 in shellfish, 3.27
- amylopectin, in starches, 4.20
- amylose, in starches, 4.20
- anaerobic bacteria
 canning and, 1.136, 138, 148
 characteristics of, 1.130
 curing salts and, 2.143
 facultative, 1.136, 138
 pasteurizing and, 2.249–250
 refrigeration and, 2.257
 sous vide cooking and, 2.206–207
 toxin production by, 1.135–136, 141
 vacuum packing and, 2.209
- anaerobic endurance, fast-twitch muscle fibers and, 3.14, 22–23
- analytical scales, 4.23
- anaphylaxis, food allergies and, 1.238–239
- anchovies
 Bagna Cauda Consommé, 5.229, 230
 Caesar Salad, 3.373
- Andalusia, Spain, Islamic courts and gastronomy of, 1.10
- Anderson, Greenville, Spartanburg (AGS) vacuum packing system, 1.40–41
- Anderson, Scott, Crispy Sweetbreads recipe, 3.150
- Ando, Momofuku, Chikin Ramen and Space Ramen created by, 5.247, 248
- Andrés, José
 Adrià and, 1.36
 Carbonated Mojito Spheres recipe, 4.188
 critics on, 1.63
 Modernist cuisine and, 1.62, 67
 Steingarten on, 1.65
 Yogurt Foam and Sweet Potato Chips recipe, 4.287
- androstene, truffle smell and, 4.350
- Angus cattle, 3.39
- animal fecal contamination, 1.116–117
- animal flesh, contamination by, 1.117
- anisakids, 1.122–123, 182, 190, 194
- Anisakis simplex*, 1.122–123, 174
- Ankimo Torchon, 3.147
- antifoaming agents, 4.244, 247, 257
- antioxidants
 in herbs, aging braises and pot roasts and, 2.98
 in smoke, 2.143
- AOC (Appellation d’Origine Contrôlée) system, for French wine production, 4.331, 332
- Apicius, 1.10, 11–12
 on bread crumbs as thickener, 4.12
 history of, 1.10
 on reductions, 4.5, 11
 seasonings described in, 1.11–12
- Apicius, Marcus Gavius, 1.10
- Appellation d’Origine Contrôlée (AOC) system, for French wine production, 4.331, 332
- Appert, Nicholas, 2.75, 84
- apple chips, parametric recipe for, 3.328
- apple cider/apple juice. *See also* hard apple cider
 Apple Cider Consommé, 2.377
 Curry-Impregnated Apple, 3.393
 Dungeness Crab and Apple Roulade, 4.169
 Oysters with Cava Foam, 4.277
 Quail with Apple-Vinegar Emulsion and Water Chestnuts, 3.101
 Salted Caramel Apple Puree, 5.17, 20
- apple cider/apple juice (*continued*)
 Vacuum-Concentrated Apple and Cabbage Juice, 2.389
- apples
 Bacon Chips with Butterscotch, Apple, and Thyme, 3.189
 Compressed Green Apple, 5.211, 212
 compressing, parametric recipe for, 3.390
 cooking sous vide, parametric recipe for, 3.288, 290, 291
 Curry-Impregnated Apple, 3.393
 dehydrating, parametric recipe for, 3.366
 freeze-drying, parametric recipe for, 3.372
 Hot Applesauce Terrine, 5.101, 103
 Hot Green Apple Gel, 4.166
 impregnating, parametric recipe for, 3.390
 Poached Apple with Pecorino Foam, 4.276
 preserving, parametric recipe for, 3.348
 puree of, parametric recipe for, 2.425
 Salted Caramel Apple Puree, 5.17, 20
 smoking, parametric recipe for, 3.362
- applejack, freeze-concentrating hard apple cider for, 2.396
- apricots
 Apricot and Jasmine Puree, 5.171, 173
 compressing, parametric recipe for, 3.390
 cooking sous vide, parametric recipe for, 3.288, 291
 dehydrating, parametric recipe for, 3.366
 Hot Apricot Marshmallow, 4.293
 impregnating, parametric recipe for, 3.390
 preserving, parametric recipe for, 3.348
- Aprile, Claudio, 1.70
- aquarium air pumps and bubblers
 foam forming with, 4.258, 260
 for sous vide cooking, 2.240–241
- Arabica coffee beans, 4.358
- Archaea, as domain on tree of life, 1.130
- L’Archestrate, 5.109
- Archestratos of Gela, Sicily, 1.12
- architecture
 artistic and functional purposes of, 1.76–77
 avant-garde, 1.17, 18
- Arcigola, 1.23
- Arenós, Pau, 1.37
- argon gas, wine preservation with, 4.347
- Arguinoniz, Victor, smoked dairy products and, 4.100
- Aristophanes, 1.12
- Arnold, David
 on agar for clarifying liquids, 2.372
 Beet Juice-Fed Oysters recipe, 3.206
 Centrifuged Roasted-Hazelnut Oil recipe, 2.367
 on Fizz-Giz system, 3.207
 freeze filtration and, 2.369
 French fries by, 3.322
 Parmesan “Polenta” recipe, 4.181

- Arnold, David (*continued*)
 Pectinase-Steeped Fries recipe, 3-324
 Pressure-Cooked Egg Toast recipe, 4-97
 pressure-cooked stock testing by, 2-87
 on unvented pressure-cookers for stocks, 2-292
- Arola, Sergi, 1-57
- Arola Barcelona, 1-57
- aromas. *See also* essences, aromatics
 Activa bonding and, 3-252
 of almonds, 3-262
 coffee roasting and, 4-361
 concentrating by evaporation and, 2-380
 of deep-frying oil, 2-123, 125
 dry-aging meat and, 3-41
 of fat in meat and seafood, 3-87–88
 fat molecules and, 3-18
 fining and removal of, 2-360
 of lutefisk, 3-194
 Maillard reaction and, 3-89
 plant food cooking and, 3-278
 ripening of cured meat or seafood and, 3-167, 173
 rotary evaporators and, 2-384, 390
 of saturated vs. unsaturated oils, 2-126
 of truffles, science of, 4-350
 of vegetables, blanching sous vide and, 3-293
 of wine, 4-348–349
- aroma kit, technology of, 4-348
- Aroma: The Magic of Essential Oils in Foods and Fragrance* (Patterson), 2-322
- Aromatic Alsatian Mustard, 5-35, 37
- aromatics
 converting grams to volumes for, 5-XXXVIII
 Maillard reaction and, 2-268
 seasonal mélanges with, 3-295
 for stocks, 2-298
 sublimation in frozen foods of, 2-261
- Aronia de Takazawa, 1-70
- arrowroot, thickening with, parametric recipe for, 4-28
- art, revolution in, 1-16–18
- L'Art de la Cuisine Française aux XIX^e Siècle* (Carême, 1833–1834), 1-9, 19
- The Art of Cooking* (Apicius). *See* Apicius
- artichokes
 Artichoke and Potato Chaat, 3-313
 Artichoke Confit, 5-171, 172
 cooking sous vide, parametric recipe for, 3-292
 puree of, parametric recipe for, 2-425
 Sous Vide Artichoke, 5-239, 244
- artificial flavors, popular perception of, 1-250, 252
- artificial meat, 3-220. *See also* sausages
- artificial sweeteners, organic label for, 1-247
- Arup, 4-246
- Arzak (restaurant), 2-450
- Arzak, Juan Mari
 Egg Blossom recipe, 4-78, 80
 Nouvelle cuisine and individuality of, 1-28
 Strawberry Milk Shake recipe, 2-473
- Arzak egg blossom, parametric recipe for cooking, 4-78
- Asador Etxebarri, 4-100
- asafetida, seasoning with, 1-11
- ascariasis, 1-123
- Ascaris lumbricoides*, 1-123
- ascorbic acid. *See* vitamin C
- ash, hardwood charcoal vs. briquettes and, 2-12
- Ashenfelter, Orley, 4-328, 329
- Asian cooking. *See also* China; Chinese entries; Japan; Japanese entries
 fusion and, 1-29
- Asian fish sauce, 3-195
- Asian palm civet, Kopi Luwak coffee and, 4-360
- Asian pear chips, parametric recipe for, 3-328
- Asian restaurants, MSG and, 1-213
- asparagus
 Asparagus Royale, 4-94
 compressing, parametric recipe for, 3-390
 cooking sous vide, parametric recipe for, 3-289, 292
 Green Asparagus and Morels with Asparagus Jus, 2-341
 impregnating, parametric recipe for, 3-390
 odor of urine and, 4-350
 puree of, parametric recipe for, 2-425
 smoking, parametric recipe for, 3-362
 Sous Vide Green Asparagus, 5-147, 149
 Sous Vide White Asparagus, 5-147, 149
- aspics, gelatin for, 4-67
- aspirator vacuum system. *See also* rotary evaporators
 for concentrating flavor, 2-380, 382–383
 filtering with, 2-356
 for Modernist kitchen, 2-284
- astaxanthin, in salmon and trout, 3-93
- L'Astrance, 1-64
- Astronaut Ramen plated-dish recipe, 5-247–251
- astrovirus infections, 1-155
- Athenaeus, 1-12
- Atkins diet, 1-242
- atmospheric pressure
 boiling point and, 1-318
 gauge pressure of pressure canners and, 2-86–87
 solubility of gases in water and, 1-333
- Au Cacao (Lord Chocolate), Mayan city-state of Tikal, 1-13
- Auber Instruments, PID controllers of, 2-240
- Australia
 Eating Quality Assured system in, 3-39
 screw tops for wine bottles in, 4-344–345
 wine innovation in, 4-331, 332
- authentic recipes, Modernist focus on novelty vs., 1-58–60
- Autoclaved Onion Soup, 3-302
- autoclaves
 browning starch for roux with, 4-22
 for extracting and infusing flavors, 2-251
 for Modernist kitchen, 2-284
 for plant food cooking, 3-298
- autoclaves (*continued*)
 prions and, 1-156
 for sous vide cooking, 2-233, 239
 sterilization using, 2-250
 venting before sealing, 2-291
- Autumn Harvest Pork Roast plated-dish recipe, 5-17–23
- avant-garde art movements, 1-17
- avocados
 Avocado Puree, 5-205, 207
 seed distribution by, 3-265
- Aztecs, gastronomy of, 1-13
- B**
- Bacillus cereus*
 food poisoning from spores of, 1-138
 replication of
 limits of, 1-145
 nisin and, 1-144–145
 wine marinade with oregano and, 1-145
- bacon
 Agar Carbonara, 4-161
 Bacon Chip, 5-219, 220
 Bacon Chips with Butterscotch, Apple, and Thyme, 3-189
 Bacon Dashi, 2-308
 Bacon Jam, 4-229
 Bacon Powder Squares, 4-34
 Braised Bacon, 5-17, 18
 combi oven cooking of eggs and, 2-174–175
 convection baking of, 2-110
 cooked, fats in, 1-233
 Eggs Benedict, 4-86
 fat, fatty acids in, 1-234
 infusion of, parametric recipe for, 2-310
 Mushroom and Bacon Cappuccino, 4-275
 Siphoned Soufflé à la Lorraine, 4-297
 Spaghetti Carbonara, 3-384
 USDA on nitrates and nitrites in, 3-160
- bacon consommé, parametric recipe for, 2-374–375
- bacteria, 1-130–151. *See also* specific bacteria
 aerobic, 1-130, 135–136
 vacuum packing and, 2-208
 agar as growing medium for, 4-128
 anaerobic. *See* anaerobic bacteria
 categories of, 1-130
 characteristics of, 1-130, 132–133
 chilling food and, 2-254, 257
 cooking cured meat or seafood and, 3-165
 death of, 1-148–151
 pasteurization and sterilization for, 1-149
 thermal death curves of, 1-150–151
 as foodborne pathogens, 1-108, 113, 135–141
 Gram-positive or Gram-negative, 1-106
 growth of, 1-142–147
 chemicals as preservatives and, 1-144–145
 on dry-aging meat, 3-41
 limits of, 1-145
 measuring, terminology of, 1-142
 modeling, mathematics of, 1-147
 infectious, invasive, 1-134–135
 marinating with, 3-198
 off-flavors and taints due to, 1-135
 quorum sensing, 1-134
 spoilage and, 1-133–134
 spores of, 1-136, 138–141
 stains for identification of, 1-106
 strains of
 naming of, 1-132
 plasmids and, 1-133
 subspecies classification of, 1-132

- Bactoferm cultures, for fermented sausage, 3-246
- bagels, Everything Bagel Broth, 4-130
- Bagna Cauda Consommé, 5-229, 230
- baked Alaska, surprise element in, 1-37
- Baked Beans, 5-67, 77
- baked goods. *See also* breads; cakes
carbon dioxide as foaming gas in, 4-254
as starch-based set foams, 4-245
water as secondary foaming gas in, 4-254
- Baked Potato Broth, 2-309
- Baked Potato Foam, 4-281, 5-193
- baker's percentage, for scaling recipes, 1-95-97
- baking, 2-100-113
altitude and, 2-113
basting and, physics of, 2-103
ceramic cookware for, 1-277
in combi ovens, 2-168
consistent
strategies for, 2-112
temperature control and, 2-111
convection. *See* convection baking; convection ovens
of crust, 2-108
deep-frying compared to, 2-116-117
derivation of term, 2-101
drying stages in, 2-106-108
heat flow simulation in roasting vs., 2-33
humidity and, 2-102
ovens for. *See* combi ovens; convection ovens; ovens; Rational combi ovens; water-vapor ovens; wood-fired ovens
preheating for, 2-102-103
professionalization of, 1-7
radiant heat and, 2-110-111
real temperature in, 2-103, 106
temperature measurement during, 2-108
turkey, cutaway illustration of, 2-104-105
- baking powder, production process for, 1-255
- baking soda, production process for, 1-255, 256
- Bakke, Kent, 4-398
- ball mills, for dry-grinding, 2-401
- ballistic gelatin, 4-68
- bamboo shoots
cooking sous vide, parametric recipe for, 3-289
Wok-Fried Malaysian Vegetables, 5-167, 169
- bananas
Banana Yogurt, 5-98
cooking sous vide, parametric recipe for, 3-288, 290
freeze-drying, parametric recipe for, 3-372
Hot Banana Gel, 4-166
ripening of, 3-283
- Bancroft, Wilder Dwight, 4-203
- Bancroft's rule, science of, 4-203
- Bandel, Horst, Rye Bread recipe, 5-59
- bang-bang controllers, 2-230-231
- Banyuls Glaze, 5-17, 19
- bao technique, for stir-frying with woks, 2-54-55
- barbecue
American-style, 2-143, 148, 3-211, 361
regional specialties in, 3-218-219
sauces for. *See* barbecue sauces
sous vide, 3-216-217
- barbecue sauces
Centrifuged BBQ Sauce, 5-66, 67, 71
East Texas BBQ Sauce, 5-66, 69
House BBQ Sauce, 4-49, 5-67
Kansas City BBQ Sauce, 5-66, 68
Kentucky BBQ Sauce, 5-66, 71
Memphis BBQ Sauce, 5-66, 70
North Carolina (Eastern Region) BBQ Sauce, 5-66, 70
North Carolina (Lexington-Style) BBQ Sauce, 5-66, 71
South Carolina BBQ Sauce, 5-66, 70
- barbecue stall, chemistry of, 3-212
- Barbecued Eel with Whipped Caramel, 4-283
- Barbot, Pascal
Eggless Citrus Curd recipe, 4-234
Foie Gras and Button Mushroom Tart recipe, 3-148
Modernist cuisine and, 1-64
- barding, 3-84
- Barham, Peter
Blake, Blumenthal and, 1-51
Blumenthal and, 1-47, 50
books by, 1-44
Erice Conferences and, 1-45
liquid nitrogen ice cream and, 1-61-62
on molecular gastronomy, 1-48
- barley
puffed, parametric recipe for, 4-302
Ragout of Grains, 5-125, 129
- Barnes, H. M., 3-92
- Bartolotta, Paul, 1-69
- baseball glove cut, from pork shoulder, 3-48, 49
- Basic Mayonnaise, 4-226, 5-233
- basting, physics of, 2-103
- Batali, Armandion, braised ox heart sandwiches by, 3-142
- Batali, Mario, Squid Sicilian Lifeguard-Style recipe, 3-113
- batch size, consistent baking and, 2-111, 112
- bathrooms, personal hygiene and, 1-196
- batter-frying
example recipes for, 3-334-337
parametric recipe for, 3-332-333
- batters
best bets for, 3-333
for deep-frying, 2-122, 127
for frying, breading vs., 3-316
parametric recipe for, 3-333
Siphoned Tempura Batter, 5-144
- bay leaf extract, parametric recipe for, 2-326
- Bazaar, 1-67
- BBQ Caramels, 4-62
- bean sprouts
preserving, parametric recipe for, 3-348
Squid-Ink Bean-Sprout Risotto, 3-397
Wok-Fried Malaysian Vegetables, 5-167, 169
- beans. *See also* specific types of beans
flours milled from, 3-376
pressure-cooking, 3-298
water for cooking, 3-276, 278
- bear meat, *Trichinella* and, 1-120, 122, 179
- beaver fever, 1-129
- Beck, Heinz, Nouvelle cuisine and, 1-28-29
- beech mushrooms
Compressed Dill Pickled Vegetables, 5-55, 58
cooking sous vide, parametric recipe for, 3-289
French Scrambled Eggs, 4-93
- beef. *See also* cattle; oxtail; steaks
Australian Eating Quality Assured grading system for, 3-39
Beef and Oyster Tartare, 3-66
Beef Brisket, 5-67, 79
Beef Shank Rilette, 5-49, 52
Beef Short Ribs, 5-67, 79
Braised Short Ribs, 5-43, 44
Brown Beef Stock, 2-301
cold-smoking, parametric recipe for, 3-210
Combi Oven Rib Eye, 2-180
cooking
boiling steak and, 3-72-75
in combi oven, 2-180
cooking times for, 1-121
FDA Food Code on cooking of steaks and, 1-174
FDA on cooking pork vs. beef and, 1-170-171
ideal temperature for, 3-89
sous vide, parametric recipes for, 3-96, 109
Crispy Beef Strands, 5-43, 44
Cured Beef Tenderloin "Bresaola Style," 3-185
curing, parametric recipe for, 3-172
Fast Cured Pepperoni, 3-247
FDA Food Code and
on cooking of steaks, 1-174
on steaks vs. roasts, 1-187
on whole roast, 1-182-183
Frankfurters, 3-242
Freeze-Dried Beef Gravy Granules, 2-454
freeze-drying, parametric recipe for, 2-451
Hanger Steak Tartare, 3-65
hot-smoking, parametric recipe for, 3-210
innards of. *See* innards
Kalbi Flank Steak, 3-199
mad cow disease and, 1-156, 157, 158, 159, 160
Microwaved Beef Jerky, 3-184, 5-43
muscles in, 3-15, 5-7
needled, *E. coli* outbreak in, 1-176
Pot-au-Feu Consommé, 5-49, 52
primal cuts of, 3-44
Rare Beef Sausage, 3-249
Rare Flatiron Steak, 5-49, 50
Rib Eye with Cherry Mustard Marmalade and Porcini, 3-97
roast, Maillard reaction and, 3-89
Salmonella time and temperature curve for, 1-187
Sous Vide Beef Juice, 2-349
Sous Vide Beef Rib Steak, 5-5, 7
- beef (continued)
tapeworms and, 1-124
tenderloin, cooking sous vide, 2-248
Wagyu. *See* Wagyu beef
whole roast, FDA Food Code on, 1-182-183
- beef cheeks
American Wagyu Beef Cheek, 5-55, 57
Beef Cheek Pastrami, 3-213
breeds and, 5-55, 57
- beef entrecôte, 1-25
- beef fat, Frankfurters, 3-242
- beef flatiron steak, seam cutting of, 3-47
- beef juice
parametric recipe for, 2-344-345
Sous Vide Beef Juice, 2-349
- beef jus
Aged Rare Beef Jus, 5-5, 6
Beef Tenderloin with Jus de Roti, 4-54
parametric recipe for, 2-344-345
Sous Vide Rare Beef Jus, 2-349
- beef knuckles, Oxtail Pho Broth, 2-307
- Beef Rib Steak plated-dish recipe, 5-5-9
- Beef Royal, Blumenthal's re-creation of, 1-51
- Beef Shank Rilette, 5-49, 52
- Beef Short Ribs, 5-67, 79
- beef stock, parametric recipe for, 2-296-298
- beef tallow, chemistry of, 2-126
- Beef Tenderloin with Jus de Roti, 4-54
- beef tongue
brining, parametric recipe for, 3-172
cooking sous vide, parametric recipe for, 3-146
- beer
Cheddar Soup, 4-225
foaming head on, 4-250-251, 254-255, 256
freeze concentration of, 2-396
Guinness "Pâte de Fruit," 4-145
ice, freeze concentration of, 2-396
nucleation sites etched on glass for, 4-251
seasoning with, 2-317
- beer can chicken, science of, 2-109
- Beet Flexicurd, 4-219
- Beet Juice-Fed Oysters, 3-206, 5-233
- Beet Meringue, 4-295
- beets
aroma of, 5-182
Beet Flexicurd, 4-219
Beet Juice-Fed Oysters, 3-206, 5-233
Beet Meringue, 4-295
Borscht Broth, 5-233, 235
cooking sous vide, parametric recipe for, 3-289
dehydrating, parametric recipe for, 3-366
Foie Gras Torchon with Beet and Hibiscus Glaze, 4-158-159
preserving, parametric recipe for, 3-348
puree of, parametric recipe for, 2-425
Sous Vide Baby Beet, 5-181, 183
Sous Vide Golden Beets, 5-233, 235
- beignets
Beignet of Sauce Ravigote, 5-49, 51
Oyster Beignet, 5-25, 28
Pork Trotter Beignet, 5-35, 38
Potato Beignets with Caviar, 4-174

- beignets (*continued*)
Zucchini Blossom Beignet, 5-53, 151
- Beijing National Aquatics Center, Water Cube at, 4-246
- Belgian endive, cooking sous vide, parametric recipe for, 3-289
- bell peppers
Compressed Dill Pickled Vegetables, 5-55, 58
preserving, parametric recipe for, 3-348
Smoked Pepper Puree, 5-55, 57
- bentonite fining, 2-352, 358
- Berasategui, Martín
on cooking small fish with crispy skin, 3-130
Ling Cod with Bergamot-Infused Milk recipe, 3-103
Modernist cuisine and, 1-57
- bergamot
Ling Cod with Bergamot-Infused Milk, 3-103
Sous Vide Sole with Bergamot Sabayon, 4-274
- Berkel, Wilhelm van, 3-44
- Le Bernardin, 1-73
- Best Bets. *See list of Parametric Recipe Tables, LV*
- beta-carotene, health benefits of, 1-235
- beurre blanc
emulsifiers for, 4-204, 214
heat-stable, 4-218
- beurre noir
Black Butter Emulsion, 5-157, 158
how to make, 4-213
- beurre noisette. *See also brown butter consommé; brown butter extract*
Brown Butter Fumet, 5-157, 158
Brown Butter-Poached Green Garlic, 5-229, 230
how to make, 4-213
Passion Fruit Brown Butter Fluid Gel, 5-181, 182
- Bezzera, Luigi, 4-372
- bigeye tuna, as alternative to bluefin, 3-55
- Bilet, Maxime, 1-85
- Bimbo Bakeries USA, 1-76
- Bincho-Tan-Grilled Sea Cucumber Maitake Mushroom, Shisito Pepper, 5-197, 203
- Biot, Jean-Baptiste, 2-117
- Biot number, 2-117
- Birdseye, Clarence, 1-306–307
food science and, 1-24
- bis-2-methyl-3-furyl-disulfide, 3-89
- biscuits, Buttermilk Biscuits, 5-67, 77
- Bismarck, Otto von, 3-220
- bisphenol A (BPA), plastic storage containers and, 2-207
- bit-and-plate grinders, for meat, 3-231, 233
- bitters, 2-320
- bitter flavors, 5-226
coffee brewing and, 4-364
- black butter
Black Butter Emulsion, 5-157, 158
how to make, 4-213
- Black Cod “Frédry Girardet” plated-dish recipe, 5-170–173
- Black Olive Oil, 5-193, 195
- Black Olive Puree, 4-230
- black pepper infusion, parametric recipe for, 2-310
- Black Sesame Rice Crisps, 4-304
- black tea infusion, parametric recipe for, 2-310
- Black Truffle Concentrate, 2-427, 5-216
- blackberries
cooking sous vide, parametric recipe for, 3-290
Sous Vide Berry Juice, 2-340
- blackbodies
adding cream to coffee and, 1-289
characteristics of, 1-285
radiation by, 1-285
charcoal grills and, 2-10–11
wavelengths and, 1-287
- black-eyed peas, Cucumber Black-Eyed Pea Salad, 5-94
- Blackstrap Molasses Country Ham, 3-183
- blade tenderizing, 3-51. *See also* Jaccard tenderizers
- Blake, Tony
on aroma compounds from Maillard reaction, 3-89
Blumenthal and, 1-51
Ericc Conferences and, 1-45
- Blanc, Georges, 1-34
- Blanc, Raymond
Ericc Conferences and, 1-45
Nouvelle cuisine in the U.K. and, 1-28
- blanching
boiling and, 2-63
of bones for stock, 2-292
browning reaction in plants and, 3-283
before cooking, 2-269
before deep-frying, 2-125
drying with warm air and, 2-433
extended and simplified 6D *Salmonella* reduction guidelines for, 1-190
food safety and, 1-191
of fruits, 2-269
of garlic, 5-26
hot-packing for canning and, 2-77
juice extraction and, 2-239
sous vide
best bets for, 3-293
how to, 3-293
thermophilic pathogens and, 2-206
for sous vide cooking, 2-267
with steam, 2-70
of vegetables, 2-214, 269
water baths and, multiple, 2-247
water baths, multiple, and, 2-249
- blancmange, Steamed Blancmange, 4-296
- Blanquette de Veau plated-dish recipe, 5-31–33
- blast chillers
crisping skin with, 3-123
for Modernist kitchen, 2-285
pacotizing and, 2-407
pros and cons of, 2-255
for quick chilling, 1-206, 2-256
- blast freezers, 1-307, 310, 2-259
- bleach and water solution
drying with warm air and, 2-433
for kitchen cleansing, 1-200, 204
- blenders
commercial
dispersing thickeners with, 4-24
for pureeing, 2-400
emulsifying with, 4-206, 208
foam forming with, 4-252, 258
handheld. *See* handheld blenders
heat generated in, 1-274, 2-398, 4-206
household, for pastes, powders, or purees, 2-400
hydration of ion-coagulated gels with, 4-124
hydrocolloid dispersion with, 4-38, 124
immersion. *See* handheld blenders
for Modernist kitchen, 2-287
for raw food, 3-269
for shearing gels into fluids, 4-176
wet-grinding with, 2-412–413
for wine, hyperdecanting, 4-343
- blogs, Modernist, 1-59–60, 66, 67
- blonding, of espresso shot, 4-388
- blood
cooking with, 3-144
as sausage binder, 3-223
viscosity of, 4-6
- blood oranges
Blood Orange Foam, 4-272
Blood Orange Sabayon, 5-147, 148
Spray-Dried Blood Orange Juice, 2-443
- blood pressure, salt and, 1-234, 236–237
- blood sausage (pudding)
history of, 3-220
parametric recipe for, 3-238–239, 5-239
- bloodline, in fish, 3-21, 22
- Bloom, measure of gel rigidity, 4-68, V
- Bloom, Oscar, 4-68
- Blossom Salad, 5-171, 172
- blow torching and blowtorches
after sous vide cooking, 2-274–275
broiling vs., 2-21
for flash-cooking sushi, 3-61
how not to use, 2-21
for Modernist kitchen, 2-286
- blowing on hot food
phase change and, 1-290
physics of, 1-288
- Blue Sky Creamery, 1-62–63
- blueberries, heat-treating, parametric recipe for, 3-359
- bluefin tuna
about, 5-176
alternatives to, 3-55
toro of, from belly, 3-84
- Blumenthal, Heston
Adrià and, 1-39
Aerated Chocolate recipe, 4-313
British bangers and, 3-236–237
Citrus Spice recipe, 2-404
cold gels and, 4-140
Crispy Halibut Cheek recipe, 3-334–335
critics on, 1-62
Cryopoached Dill Meringue recipe, 5-165
Cryopoached Green Tea Sour recipe, 4-291
on dehydrating fruits and vegetables, 3-366
edible films used by, 4-60
Edible Wrappers recipe, 4-62
- Blumenthal, Heston (*continued*)
Ericc Conferences and, 1-45, 46, 47
Fizzy Grape Fluid Gel recipe, 4-183
food science and, 1-49–50
freeze filtration and, 2-369
on gazpacho flavor, 5-278
Hot and Cold Tea recipe, 4-176, 182
Hot Blood Pudding Custard recipe, 4-221
Lemon Strips recipe, 4-61
liquid nitrogen and, 1-63, 65
“mackerel invertebrate” dish by, 3-252
Mackerel with Spicy Tomato Skin recipe, 4-175
“Marmite broth” and, 2-304–305
Microwave-Fried Parsley recipe, 3-312
Mock Turtle Soup recipe, 2-394
norovirus outbreak and, 1-155
Onion Fluid Gel recipe, 4-183
Passion Fruit Jelly recipe, 4-180
as perfectionist and Modernist enthusiast, 1-50–51
Pommes Pont-Neuf recipe, 3-323
Potato Puree recipe, 3-296, 297
rotary evaporation and, 2-388
Salmon Poached in Licorice recipe, 4-155
science applied to food by, 1-5, 52
stock preparation by, 2-283
Tomato Confit recipe, 5-62
Triple-Cooked Chips of, 3-322
vacuum-drying by, 2-436
- Blumenthal, Michael, 2-123
- BMI (body mass index), 1-240, 244
- Bo Innovation, 1-70
- boar, wild
E. coli O157:H7 outbreak of 2006 and, 1-172
Trichinella and, 1-120, 122
- Bocuse, Paul, 1-24, 26
sous vide cooking and, 1-42
- body mass index (BMI), 1-240, 244
- Boeuf in Gelée, 4-163
- Boiardi, Ettore, innovations of, 1-21, 31
- boiling, 2-62–69. *See also* boiling point; boiling zone; boiling-water canning; poaching
characteristics of, 1-315, 317–319
cutaway illustration of, 2-64–65
“fixing” color with, chemistry of, 2-63, 66
flash, 1-317
Giardia oocysts and, 1-129
heat transfer with, 2-63
of liquid nitrogen, science of, 2-457
under pressure, 2-295
pressure cooking and, 2-291
rolling, blanching using steam vs., 2-267
stages of physics of, 1-316
of steak, 3-72–75
steaming vs., 1-319, 2-70, 72–73
thick or thin sauces and, 2-68–69
vacuum packing and, 2-213, 215
of water, hydrogen bonds and, 1-298
water temperature and, 1-318
- boiling point
elevation of, 1-318
in phase diagrams, 1-302–303
vacuum pressure for water or ethanol vs., 2-391

- boiling point (*continued*)
of water
relative humidity and, 2-163
vacuum pressure vs., 2-391
- boiling zone
baking and, 2-107–108
convection baking and, 2-110
in steak frying, 3-75
- boiling-water canning, 2-76–83
cutaway illustration of, 2-82–83
food acidity issues in, 2-76
packing food in canning jars for, 2-78
raw packing or hot-packing, 2-77
sterilization and, 2-76
sterilizing acidic canned foods for, 2-81
USDA guidelines for, 2-79–80
- bok choy, Sichuan Bok Choy, 3-313
- Boltzmann, Ludwig, 1-265
- Bond's law, 2-401
- Bone Marrow Custard, 5-60, 63
- bones
blanching, for stock, 2-292
cooking of, 3-143–144
sous vide cooking and, 2-207
for stocks, 2-288
- bonito, Quinoa and Idiazábal with
Bonito Stock Veil, 4-168
- Bonnefons, Nicolas de, 1-9, 19
- books, water-soaked, freeze-drying for
conservation of, 2-444
- Bordeaux, France
microoxygenation by winemakers in,
4-331
Napoleon III on classification of
wines from, 4-331–332
wine storage in, 4-346
- Bordeaux Equation, science of, 4-328
- Boring, Edwin, 4-341
- Borscht Broth, 5-233, 235
- Bose-Einstein condensate, 1-301
- Bosse, Chris, 4-246
- bottarga. *See also* caviar; fish roe
Sea Urchin Bottarga, 3-186, 5-225,
226
- bottle size, wine storage and, 4-346
- bottled water, as pure water, 1-335
- bottomless portafilters, 4-385. *See also*
crotchless portafilters
- Bottura, Massimo, 1-70
- botulism
common misconceptions about,
1-118
food poisoning from spores and,
1-138–139
nitrates or nitrites as protection
from, 3-165
sous vide cooking and, 2-206
- boudin blanc
Boudin Blanc, 3-243
parametric recipe for, 3-238–239
- Boudin Noir Bread Pudding, 5-125, 127
- Boudin Noir Custard, 5-125, 127
- Bouillabaisse Broth, 2-308
- Bouley, David
on Modernist cuisine in Spain, 1-57
New International cuisine and, 1-30
Oxtail Consommé and, 2-376
- Boulud, Daniel
Boeuf in Gelée and, 4-163
hamburger and, 5-11
on McGee's *On Food and Cooking*, 1-44
New International cuisine and, 1-30
- bound water, dehydration and, 1-321
- boundary layer
convection cooking and, 1-283,
2-108, 110
drying and, 2-431
evaporation and, 1-288
- bovine spongiform encephalopathy
(BSE), 1-156, 157–159, 160
- bowl choppers, 3-233. *See also* Buffalo
choppers
- BPA (bisphenol A), plastic storage
containers and, 2-207
- Bradbury, Ray, 2-137
- Bradley smokers, 2-147
- Brahman cattle, calpastatin in Wagyu
beef vs., 3-76
- brain, prion diseases and, 1-156–157
- Braised Bacon, 5-17, 18
- Braised Lamb Shoulder, 5-81, 83
- Braised Napa Cabbage, 5-109, 111
- Braised Pine Nuts with Winter Squash,
5-60, 65
- Braised Sauerkraut, 5-35, 39
- Braised Short Ribs, 5-43, 44
- Braised Short Ribs plated-dish recipe,
5-42–47
- Braised Turnips with Saffron, 5-121, 123
- Braised Veal Fore Shank, 5-60, 62
- braising
aging and, chemistry of, 2-98
derivation of term, 2-93
holding at specific temperature in,
2-247
of meat, how to, 2-99
pot-roasting or stewing vs., 2-93
stewing as, 2-96–98
- Bras, Michel
Adrià and, 1-34
Black Olive Oil recipe, 5-195
chocolate cake with liquid center by,
1-15
Le Gargouillou recipe, 1-40, 3-294–295
garlic mayonnaise of, 4-226
Licorice Powder recipe, 2-405
liquid nitrogen and, 1-62, 65
Molasses Butter recipe, 2-331
Nouvelle cuisine and individuality
of, 1-27, 39–40
Soft-Boiled Egg and Garlic Emulsion
recipe, 4-227
sous vide cooking and, 1-42
- bratwurst, parametric recipe for,
3-238–239
- Bratzler, L. J., 3-77
- bread crumbs
in sausage, 3-226
as thickening agent, 4-12
- bread pudding, Boudin Noir Bread
Pudding, 5-125, 127
- breeding
example recipes for, 3-340–343
for frying
batters vs., 3-316
of gizzards, 3-142
parametric recipe for, 3-338–339
pork-rind, 3-122–123
sieving particles for, 2-353
skin as, 3-118
- bread. *See also* bread crumbs; brioche
Corn Bread, 5-67, 76
at elBulli, Adrià on, 1-34–35
gel-like properties of, 3-376
Hamburger Buns, 5-11, 13
- bread. *continued*
historical development of, 1-7
Moroccan Batbout Flat Bread, 5-135,
139
New American cuisine and, 1-28–29
parathas as, 5-92
Rye Bread, 5-55, 59
stale
chemistry of rescuing, 1-320
starch granules and, 3-280
as starch-based set foam, 4-245
water as secondary foaming gas in,
4-254
white, industrial production of,
4-252, 254
The Breakfast Egg plated-dish recipe,
5-211–213
breakfast-style sausage, parametric
recipe for, 3-236–237
breast cancer, red meat and, 1-220
- Brettanomyces (brett), wine aroma and,
4-350
- brevis mortis, slaughter and, 3-32
- brewing
of coffee, 4-364, 366–370
control chart for, how to use,
4-366–367
of espresso, choosing temperature
for, 4-385
by hunter-gatherers, 1-6
professionalization of, 1-7
- Brillat-Savarin, Jean Anthelme, 1-9
- brines. *See also* brining
basic, parametric recipe for, 3-168
best bets for, 3-168
parametric recipe for, 3-168–172
reusing, food safety and, 3-164
- brining, 3-152–158
accelerating
how to, 3-174–175
strategies for, 3-166–167
acidic marinades vs., 3-193
best bets for, 3-168, 172
color of meat and, 5-102
equilibrium method for, 3-158
how to, 3-170–171
functional ingredients for, 3-155
goal for, 3-154
high-concentration method for,
3-171
Maillard reaction and, 3-91
with other salts, chemistry of, 3-157
process of, 3-152, 156, 158
time and salt concentration for,
3-154
of vegetables with salt, 3-346
- brioche
Brioche Toast, 5-219, 221
Caesar Salad, 3-373
Country Bread Crisps, 5-85, 86
briquettes, hardwood charcoal vs., 2-12
- British Airways, sous vide cooking and,
1-41
- British bangers, parametric recipe for,
3-236–237
- British thermal units (BTUs)
calculating grill power using, 2-10
definition of, 1-272
for wok burners, 2-52
- brittleness, gel selection and, 4-73
- broccoli
Broccoli and Hazelnut-Oil Puree,
2-426
- broccoli (*continued*)
Combi Oven-Steamer Broccoli,
2-181
puree of, parametric recipe for, 2-425
steamed in combi oven, 2-181
- La Broche, 1-57
- Brochet, Frédéric, 4-334–335, 340
- Brock, Sean
food inspectors and, 1-83
Modernist cuisine and, 1-67
Shrimp and Grits recipe, 3-377
- Broiled Tuna Belly with Montpellier
Butter, 4-220
- broilers
for flash-cooking sushi, 3-61
for Modernist kitchen, 2-287
portable, how not to use blowtorch
as, 2-21
radiant heat from, 1-277, 284, 285
rules of thumb for, 2-18–20
sweet zone of, calculating, 2-22–23
types and features of, 2-20–22
- broiling, 2-18–27
after cooking sous vide, 2-272–273
equipment for, 2-20–22. *See also*
broilers
Girardet method for poaching and,
2-24–25
heat intensity and, 2-22–23
pizzas, 2-26–27
rules of thumb for, 2-18–20
- bromelain, 2-335, 3-195, 5-6
- bromophenols, 3-88
- broths
Bacon Dashi, 2-308
Baked Potato Broth, 2-309
Borscht Broth, 5-233, 235
Bouillabaisse Broth, 2-308
concentrating flavor of, 2-379, 380
Cured Ham Broth, 5-81, 84
Duck Broth with Vanilla and Bay
Leaf, 5-109, 110
example recipes for, 2-303–309,
5-197
freeze-drying, parametric recipe for,
2-451
Goulash Broth, 5-55, 56
Ham Broth, 2-306
Hon Dashi, 2-306, 5-197
Laksa Broth, 2-307
Mushroom Broth, 5-11, 14
Oxtail Pho Broth, 2-307
parametric recipe for, 2-304–305
Tom Yum Broth, 2-309
vacuum filtering of, 2-354
- Brown, Robert, 1-265
- Brown Beef Stock, 2-301
- brown butter
Brown Butter Fumet, 5-157, 158
Brown Butter-Poached Green Garlic,
5-229, 230
how to make, 4-213
Passion Fruit Brown Butter Fluid
Gel, 5-181, 182
- brown butter consommé, parametric
recipe for, 2-374–375
- brown butter extract, parametric recipe
for, 2-326
- brown chicken jus, parametric recipe
for, 2-344–345
- Brown Veal Stock, 2-300
- Brownian motion, 1-265

- browning
 in combi oven, convection mode for, 2-168
 microwave ovens and, 2-189
 modern methods of braising and, 2-98
 browning reaction, 3-89. *See also* Maillard reaction
 in plant foods, 3-283
 in plant juices, 2-338
 Brugués, Salvador, 1-58
 Bruni, Frank, 1-63
 Brussels sprouts, Deep-Fried Brussels Sprouts, 3-321
 BSE. *See* bovine spongiform encephalopathy
 BTUs (British thermal units)
 calculating grill power using, 2-10
 definition of, 1-272
 for wok burners, 2-52
 bubblers, aquarium
 foam forming with, 4-258, 260
 for sous vide cooking, 2-240–241
 bubbles
 best bets for, 4-264
 boiling water and, 1-315, 317–318
 example recipes for, 4-267–269
 as gas released from heating water, 4-252
 geometry of, 4-246
 parametric recipe for, 4-264
 in steamed milk for espresso, 4-392
 steaming and, 2-71
 for thickening, 4-19
 in whipped cream, 4-256
 Büchi Labortechnik, 2-386–387, 391
 Büchner, Ernst, 2-354
 Büchner funnel, 2-354, 356
 Buckwheat Dough, 5-233, 234
 buckwheat pasta, parametric recipe for, 3-381
 Buckwheat Pelmeni, 5-233, 237
 Buddha's hand citron
 Buddha's Hand Vodka, 2-389
 cooking sous vide, parametric recipe for, 3-291
 distillation of, 2-388
 Buffalo choppers, for emulsifying sausage, 3-225, 230, 233
 buffering, 2-315
 Bulgogi Glaze, 5-285, 287
 bulk phase, in emulsions. *See* continuous phase
 bulking agents, spray-dried powders and, 2-442
 Buon Vino pressure filters
 characteristics of, 2-358
 clarifying juice with, how to, 2-355
 Burke, Sam Fahey, sour rhubarb sorbet and, 5-277
 Burkitt, Denis P., 1-214–215, 218
 Burkitt's lymphoma, 1-214
 Burmese Chickpea Tofu Laksa, 4-121
 burners
 choosing, 2-41–43
 conduction and, 1-277
 gas, 1-274
 for griddles, 2-40–41
 induction, 1-274
 for panfrying, 2-41–43
 for stir-frying, 2-48, 52, 56–57
 wok, 2-52, 56–57, 287
 burr grinders
 dry-grinding with, 2-401–402
 burr grinders (*continued*)
 quality of, coffee grind and, 4-378
 technology of, 4-376
 butchering, 3-44–50
 dissecting pork shoulder after, 3-48–49
 seam cutting and, 3-45–47
 slicing and, 3-47, 50
 butter. *See also* butters
 carotenoid pigments and, 3-92
 clarified
 browned solids from, 4-212
 how to make, 4-213
 emulsions and, 4-218–220
 as foaming agent, 4-251
 for froths, parametric recipe for, 4-264
 health risks of margarine vs., 1-231
 Hot Butter Foam, 4-283
 organic food movement perception of, 1-253
 smoked, parametric recipe for, 4-100
 as soft foam, 4-247
 butter extract, parametric recipe for, 2-326
 butterfat, separating from cream, 2-366, 368
 butterfly fillet, of fish, 3-52
 buttermilk
 Buttermilk Biscuits, 5-67, 77
 for marinating, 3-198
 parametric recipe for, 4-56
 Spray-Dried Buttermilk, 2-443
 butternut squash
 Braised Pine Nuts with Winter Squash, 5-60, 65
 cooking sous vide, parametric recipe for, 3-289
 freeze-drying, parametric recipe for, 3-372
 Pickled Butternut Squash, 5-60, 64
 Squash Glaze, 5-60, 63
 butters
 beurre blanc and. *See* beurre blanc
 black. *See* black butter
 Broiled Tuna Belly with Montpellier Butter, 4-220
 brown. *See* brown butter
 Centrifuged Carotene Butter, 2-365, 5-185
 Coffee Butter, 5-211, 212
 Condrieu Butter, 5-171, 172
 Marcona Almond Butter Paste, 5-281, 282
 Molasses Butter, 2-331
 Passion Fruit Brown Butter Fluid Gel, 5-181, 182
 Sea Urchin Butter, 5-225, 227
 Shellfish Butter, 2-329
 Ultrastable Beurre Blanc, 4-219
 Whipped Butter, 4-286
 button mushrooms
 Boudin Blanc, 3-243
 Foie Gras and Button Mushroom Tart, 3-148
 cabbage. *See also* green cabbage; Napa cabbage; red cabbage; sauerkraut; savoy cabbage; white cabbage
 dehydrating, parametric recipe for, 3-366
 preserving, parametric recipe for, 3-348
 Caesar Salad, 3-373
 café au lait, 4-393
 caffè breve, 4-393
 caffè crema, 4-379
 caffè latte
 as art form, 4-391–393
 composition of, 4-393
 milk foam in, 4-244
 patterns in, how to make, 4-394–395
 caffè mocha, 4-393
 caffeine
 in decaffeinated coffee, 4-363
 digestion of, 4-363
 cakes
 chocolate, with liquid center, evolution of, 1-15–16
 Green Tea Cake, 4-292
 Microwaved Pistachio Sponge Cake, 4-294
 Le Calandre, 1-70
 calcium
 in selected foods, 4-VII
 sources of, for ion-coagulation, 4-129
 calcium chloride
 in blanching water, 2-125
 for brining or curing, 3-157, 158
 meat marinade containing, 3-76, 198
 product guide for, 4-II–III
 as salt, 4-126
 calcium gluconate
 for cold gels, parametric recipe for, 4-140
 product guide for, 4-II–III
 calcium ions
 as hydrocolloid coagulant, 4-70, 126
 spherification and, 4-184
 calcium lactate
 product guide for, 4-II–III
 for spherification, parametric recipe for, 4-187
 California
 State Fair wine competition in, 4-338–339
 wine innovation in, 4-331, 332
 California Department of Health Services, *E. coli* O157:H7 outbreak of 2006 and, 1-172
 calories, 1-272
 calpains
 aging meats and, 3-39
 meat tenderness and, 3-76
 reaction rates of, temperature and, 3-78
 yogurt or buttermilk marinades and, 3-198
 calpastatin, meat tenderness and, 3-76
 Cameroon, carbon dioxide eruption from Lake Nyos in, 2-466
 campylobacter, 1-117
Campylobacter jejuni, 1-134, 145
 Can Fabes, 1-63, 258. *See also* Santamaria, Santi
 can openers, invention of, 2-75
 Canadian bacon, Eggs Benedict, 4-86
 Canard Apicius, 5-121
 cancer. *See also* carcinogens
 of breast, red meat and, 1-220
 colorectal, dietary fiber and, 1-214–217
 International Agency for Research on Cancer and, 1-220
 Candied Orange and Carrot Pulao, 5-94
 Candied Puffed Oats, 5-125, 128
 candlenuts, Roasted Candlenuts, 5-175, 177
 candling, for anisakid detection, 1-123
 candying fruits, with sugar, 3-346
 cannibalism, kuru and, 1-159
 canning, 2-74–91
 anaerobic bacteria and, 1-136, 138
 boiling-water method of. *See* boiling-water canning
 frigi-canning and, 2-84–85
 of ham, 1-21
 heating requirements and duration for, 2-79
 history of, 2-75
 how to pack food in jars for, 2-78
 packaging with care for, 2-77
 of plant foods, 3-344
 with pressure. *See* pressure-canning
 sous vide and, 2-204–205
 canning industry, bacteria reduction standards of, 1-148
 canola oil, chemistry of, 2-126
 cantaloupes
 Compressed Melon Terrine, 3-392
 cooking sous vide, parametric recipe for, 3-288
 Cantonese Fried Rice, 2-176–177
 Cantu, Homaro
 on carbonated grapes, 2-469
 edible films of, 4-60
 edible films used by, 4-60
 Modernist cuisine and, 1-67
 patents applied for, 1-71, 72
 on Postmodern cuisine, 1-57
 on shucking oysters with liquid nitrogen, 2-458
 Trotter and, 1-69
 Capel, José Carlos, 1-59
 Caper Droplets, 5-157, 159
 Caplan, Frieda, 1-15
 capon broth, parametric recipe for, 2-304–305
 cappuccino
 Cappuccino Foam, 4-266
 composition of, 4-393
 how to make patterns in, 4-394–395
 Mushroom and Bacon Cappuccino, 4-275
 perfect pour for, 4-392
 steaming milk for, 4-391
 capsaicin
 biology of, 3-271
 hotness perception and, 3-270
 purging bivalves and, 5-231
 capsids, of viruses, 1-152
 capsule systems, for espresso, technology of, 4-400
 caramelization
 covered sautéing and, 2-58
 pressure-cooking and, 3-298
 smoking and, 2-135
 Caramelized Carrot Soup, 3-301

- Caramelized Coconut Cream, 4-50
 Caramelized Crème Fraîche, 5-25, 28
 Carasso, Daniel, 1-20–21
 carbohydrates
 diets low in, 1-242
 in fermented sausage, 3-246
 carbon dioxide (CO₂)
 for carbonating drinks, 1-334, 4-254
 chemical formula for, 2-464
 coffee roasting and, 4-358
 containers and, air in head space of, 2-464
 crema on espresso and, 4-384
 critical point for, 1-328
 digestion of, 2-464
 as dry ice, 2-458, 464. *See also* dry ice
 eruption of Lake Nyos, Cameroon and, 2-466
 as foaming gas, 4-254–255
 solubility in water, 1-330, 332, 4-243
 supercritical, decaffeinated coffee and, 4-363
 supercritical fluid extraction and, 2-320
 taste of, 4-256
 triple point for, 1-328
 truffles and, preserving freshness with, 2-470
 for whipping siphons, 4-256
 carbon filtration, for purifying water, 1-335
 carbon monoxide (CO), to bloom myoglobin in meat, 3-95
 carbonated drinks, carbon dioxide for, 1-334, 4-254
 Carbonated Golden Raisins, 5-157, 159
 Carbonated Mojito Spheres, 4-188
 carbonation
 characteristics of, 4-464
 equipment for, 2-286
 example recipes for, 2-472–473, 5-11
 fizziness taste and, science of, 2-465
 of fruit, 1-69, 2-469, 472
 of liquids
 pacotizing and, 2-407
 techniques for, 2-464
 temperature and, 2-464
 tips for, 2-468
 Perlini system for, 4-347
 physics of, 1-334
 taste, science of, 2-465
 wine pairing and, 4-352
 carbonyls, in smoking wood, 2-135, 3-211
 carboxyl methylcellulose (CMC)
 interactions with other thickeners, 4-44–45
 product guide for, 4-IV–V
 properties and uses of, 4-42–43
 carcinogens
 food additives as, 1-252
 grilled meat and fish and, 1-220
 in smoke, liquid smoke for avoiding, 2-149
 smoked food and, 2-143
 Carême, Antonin
 aspics of, 4-68
 as chef to French ruling class, 1-8, 9
 culinary rules and codes of, 1-5
 French cuisine and, 1-19
 innovations of, 1-20
 meat embedded in gelatin by, 3-250
 Carl G. Sontheimer Prize for Excellence in Innovation and Creativity in Design, at M.I.T., 2-412
 Carlson, Michael, 1-69
 Carmona, John Paul, Beef Cheek Pastrami recipe, 3-213
 carotenoid pigments, 3-30, 92, 93
 carrageenan
 dairy gel formation with, 4-102
 as emulsion stabilizer, 4-215
 as foam stabilizer, 4-257
 in heavy cream, 4-102
 iota. *See* iota carrageenan
 kappa. *See* kappa carrageenan
 lambda. *See* lambda carrageenan
 natural sources for, 1-253
 product guide for, 4-II–III
 production process for, 1-257
 spherification using, 4-184
 uses of, 4-128
 Carrot and Dill Fricassee, 5-161, 164
 carrot chips, parametric recipe for, 3-328
 carrot tops, Microwave-Fried Parsley and Carrot Tops, 5-49, 53
 carrots
 benefits of cooking, 3-267
 Candied Orange and Carrot Pulao, 5-94
 Caramelized Carrot Soup, 3-301
 Carrot and Dill Fricassee, 5-161, 164
 Centrifuged Carotene Butter, 2-365, 5-185
 cooking sous vide, parametric recipe for, 3-289, 292
 Freeze-Dried Carrot Foam, 4-300
 freeze-drying, parametric recipe for, 3-372
 Glazed Carrot, 5-185, 186
 Glazed White Carrot, 5-31, 32
 Nukazuke, 3-354
 preserving, parametric recipe for, 3-348
 puree of, parametric recipe for, 2-425
 Root Vegetable Risotto, 3-309
 Sous Vide Root Vegetables, 5-49, 53
 Carsberg, Scott
 Dungeness Crab and Apple Roulade recipe, 4-169
 Pecorino with Truffle Honey on Cedar recipe, 4-101
 carvacrol, as antimicrobial compound, 1-145
 case-control studies, of nutrition, 1-220
 case-hardening, as form of drying, 2-428
 casein
 as fining agent, 2-360
 in homogenized cream, 2-360, 368
 as surfactant, 4-202
 cashews
 Cashew Halvah, 5-93
 Green Mango and Cashew Salad, 5-167, 169
 casing, sausage, 3-226, 227
 cassava
 flour milled from, 3-376
 toxins in, 3-262
 Vegetable Coals, 3-395
 Cassoulet Toulousain (Autumn) plated-dish recipe, 5-81–84
 Cassoulet Toulousain (Spring) plated-dish recipe, 5-85–87
 cast iron cookware, 1-278, 280
 cats
 spongiform encephalopathy of, 1-159
 Toxoplasma gondii and, 1-126–127
 catalysis, 2-20
 catalysts, 2-21, 335
 catalytic gas broilers, 2-20–21
Catching Fire: How Cooking Made Us Human (Wrangham), 1-6, 3-269
 cathepsins, 3-39, 76, 78
 cattle. *See also* beef; oxtail; veal
 E. coli O157:H7 and
 transmission of, 1-118–119, 172
 vaccinations for, 1-145
 prion diseases in, 1-158
 scrapie in, 1-158
 sheep liver fluke and, 1-123
 tapeworms and, 1-124
 cauliflower
 Cauliflower Couscous, 3-388
 Cauliflower Crème Anglaise, 4-89
 Cauliflower Foam, 5-281, 283
 Cauliflower Panna Cotta, 4-142
 Deep-Fried Cauliflower, 5-281, 283
 dehydrating, parametric recipe for, 3-366
 preserving, parametric recipe for, 3-348
 puree of, parametric recipe for, 2-425
 Cava wine, Oysters with Cava Foam, 4-277
 caviar
 cold-smoking, parametric recipe for, 3-210
 Melon Caviar, 4-189
 Potato Beignets with Caviar, 4-174
 cavitation
 collapse, in boiling, 1-317
 by high-pressure homogenizers, 2-414, 415
 CDC. *See* U.S. Centers for Disease Control and Prevention
 CDS/NPOS notation system for cooking, 1-47, 48
 celebrity chefs, 1-19, 50, 60. *See also individual chefs' names*
 New American cuisine and, 1-29
 New International cuisine and, 1-31
 Nouvelle cuisine and, 1-26
 celery, compressing and impregnating, parametric recipe for, 3-390
 celery root
 Celery Root Mousseline, 2-427, 5-126
 cooking sous vide, parametric recipe for, 3-289
 Pickled Celery Root, 5-126, 133
 puree of, parametric recipe for, 2-425
 Root Vegetable Jus, 5-161, 163
 Sous Vide Root Vegetables, 5-49, 53
 celery root chips, parametric recipe for, 3-328
 Celery Root Mousseline, 2-427, 5-126
 celiac disease, gluten intolerance and, 1-239
 El Celler de Can Roca, 1-58
 cellulose
 gels not formed from, 4-124
 for low-fat sausage tenderness, 3-224
 cellulose gum LV, thickening with, parametric recipe for, 4-46, 47
 cellulose gums
 dispersion and hydration of, 4-127
 gelling agents from, 4-126
 parametric recipe for, 4-170–171
 properties and applications of, 4-170
 cellulose-based hydrocolloids, as thickeners, 4-19
 Celsius, Anders, 1-266
 Celsius temperature scale, 1-266, 285
 Centers for Disease Control and Prevention. *See* U.S. Centers for Disease Control and Prevention
 centipoise (cP), 4-6
 Centre de Recherche et d'Études pour l'Alimentation (CREA), 1-43
 centrifugal-style juicers, 2-332, 334
 Centrifuged BBQ Sauce, 5-66, 67, 71
 Centrifuged Carotene Butter, 2-365, 5-185
 Centrifuged Pea Juice, 2-367
 Centrifuged Roasted-Hazelnut Oil, 2-367
 centrifuges, 2-360–368
 balancing, how to, 2-363
 for cholesterol tests, 1-226–227
 for filtering, 2-351, 352, 360, 368
 Genevac Rocket Evaporator as, 2-391–395
 for Modernist kitchen, 2-284
 safety of, 2-361
 separating butterfat from cream with, 2-366
 for separating emulsions, 4-210, 212
 separating liquids with, 2-364
 types of, 2-362
 centrifuging, example recipes for, 2-365–367, 5-5, 60, 185
 century egg
 Century Egg, 4-83
 parametric recipe for, 4-82
 cephalopods. *See also* octopus; squid
 biology of, 3-24
 ceramic cookware, conductivity and, 1-277
 ceramic plates, in gas grills, 2-11
 Certified Angus Beef, 3-39
 cestodes
 contamination by, 1-120
 destruction of, 1-123
 types of, 1-124
 ceviche
 acidic marinades for, 3-193, 194
 Fluke Ceviche, 3-203
 CFUs (colony-forming units), 1-142
 CGS (centimeter, gram, second) units, 1-272
 Chaat Masala, 5-281, 282
 chamber sealers, 2-214–221. *See also* vacuum chambers
 advantages of, 2-214
 boiling inside, damage and, 2-215
 common problems with, 2-220–221
 gas-flushing, truffle storage with, 2-471
 impulse sealers and, 2-225
 for Modernist kitchen, 2-284
 optional features of, 2-216–217
 for plant food cooking, 3-286
 vacuum packing with, 2-209, 218, 219
 Chamberlin, Walter, 1-60

- Champagne
 Fizzy Grape Fluid Gel, 4-183
 foaming head on, 4-254
 nucleation sites etched on glass for, 4-251
 storage of, 4-346, 347, 348
 “Champagne grapes,” Cantu on, 2-469
 Champion-style juicers, 2-332, 334
 Chang, David
 Bacon Dashi recipe, 2-308
 Deep-Fried Brussels Sprouts recipe, 3-321
 Kimchi recipe, 3-352
 Shaved Foie Gras recipe, 3-177
 Uni with Whipped Tofu and Tapioca recipe, 4-285
 Chantecler, 1-34
 chanterelles, Mushroom Puree, 5-215, 216
 chao technique, for stir-frying, 2-54, 56–57
 Chapel, Alain
 Pigeon with Shellfish Butter recipe, 3-100
 pot-au-feu of, 5-49
 Chaptal, Jean-Antoine, 4-330
 chaptalization, in viticulture, 4-330, 332
 charcoal. *See also* coals; prune coals
 vs. briquettes for grilling, 2-12
 as fining agent, 2-360
 vs. gas for grilling, 2-10–11
 making, 2-134
 vs. wood for grilling, 2-7
 charcoal grills
 controlling heat in, 2-14
 gas grills vs., 2-10–11
 chard stems, cooking sous vide, parametric recipe for, 3-289
 Chardonnay, genetic origins of, 4-327–328
 Charpentier, Georges, 1-19
 Charred Leek Oil, 5-17, 18
 Château Cordeillan-Bages, 1-63
 chawanmushi
 Chawanmushi, 4-96
 description of, 4-96
 parametric recipe for, 4-92
 cheddar cheese
 The American Cheese Slice, 4-224
 Cheddar Soup, 4-225
 Cheese Puffs, 4-305
 Frozen Cheddar-Cheese Powder, 2-411
 Mac and Cheese, 3-387
 Cheddar Soup, 4-225
 cheese. *See also specific types of cheese*
 constructed, best bets for, 4-223
 as dairy gel, 4-102–123
 emulsions and, 4-218, 222–225
 FDA Food Code on milk
 pasteurization for, 1-185
 Fresh Cheese Curds, 4-106
 processed, history of, 4-222
 raw milk
 French vs. U.S. standards on, 1-171, 173
 safe cooking standards for, 1-170
 smoked, parametric recipe for, 4-100
 spoiled, risks of, 1-139
 cheese fondue, parametric recipe for, 4-223
 Cheese in a Tube, 4-225
 Cheese Puffs, 4-305
 cheese sauce, parametric recipe for, 4-223
 cheese slices, parametric recipe for, 4-223
 cheese soup, parametric recipe for, 4-223
 cheese spread, parametric recipe for, 4-223
 cheese trolley, 1-25, 35
 cheesecloth, for filtering, 2-351
 Cheesy “Whiz,” 4-225
 Chef Boy-ar-Dee canned goods, 1-21
 chefs, celebrity, 1-19, 50, 60. *See also individual chefs’ names*
 New American cuisine and, 1-29
 New International cuisine and, 1-31
 Nouvelle cuisine and, 1-26
 chefs, professional. *See also individual chefs’ names*
 cooking by amateur chefs vs., 1-87–88
 copying dishes and, 1-71
 early civilization and development of, 1-7–8
 hygiene accessories for, 1-202–203
 recipes inspired by or adapted from, 1-100–101
 Chemex coffee brewer, 4-369
 chemicals
 for food preservation, 1-144–145
 in foods, 1-250
 juicing citrus fruits and, 2-332
 kitchen, common, 4-VI
 prions and, 1-156
 in smoking, 2-140
 cherries
 Cherry Vinaigrette, 5-267, 270
 cooking sous vide, parametric recipe for, 3-288
 Dried Cherry and Hazelnut Nougatine, 5-267, 270
 Foie Gras Cherries, 4-153, 5-267, 268, 269
 Pickled Bing Cherry, 5-267, 268
 preserving, parametric recipe for, 3-348
 Rib Eye with Cherry Mustard Marmalade and Porcini, 3-97
 cherries (coffee plant fruit), 4-358
 Cherry Vinaigrette, 5-267, 270
 chestnuts
 Chestnut Confit, 5-17, 18
 Chestnut Cream, 5-17, 21
 Chestnut Puffs, 5-17, 20–21
 cooking sous vide, parametric recipe for, 3-291, 292
 Chevalier-Appert, Raymond, 2-75
 Chez Panisse, 1-28
Chez Panisse Menu Cookbook (Waters), 1-28–29
 Chicago, as Modernist mecca, 1-69
 chicharrones, water as foaming gas for, 4-254
 chicken
 aging, 3-41
 beer can roasting of, 2-109
 Boudin Blanc, 3-243
 breeding for white meat, 2-120
 brining, parametric recipe for, 3-172
 Chicken Tikka Masala, 3-204
 Chilled Chicken-Noodle Soup, 4-238
 chicken (*continued*)
 cold-smoking, parametric recipe for, 3-210
 The Colonel’s Chicken, 3-336
 cooking
 sous vide, parametric recipe for, 3-99, 108
 times for, 1-180, 181
 Crisp Chicken Crown, 5-113, 116
 “danger zone” temperatures and, 1-176, 177, 178–179
 deep-frying, high-pressure, 2-120–121
 fast-twitch vs. slow-twitch muscle in, 3-12
 FDA safe cooking standards for, 1-170
 food safety misconceptions about, 1-180–181
 Fried Chicken Sausage, 3-249
 Gong Bao Chicken, 3-205
 Hay-Smoked Chicken Crown, 5-113, 114–115
 hot-smoking, parametric recipe for, 3-210
 Low-Fat Chicken Sausage, 3-248
 meat color of duck vs., 3-16–17
 Modernist Fried Chicken, 3-337
 Poulet au Feu d’Enfer, 3-100
 Pressure-Cooked White Chicken Stock, 2-301
 primal cuts of, 3-44
 program cooking in combi oven, 2-169
 roast, combi oven cooking of, 2-178–179
Salmonella and, 1-180–181
 Ultracrisp Chicken Crown, 3-134–135
 Yakitori, 3-201
 chicken fat
 Boudin Blanc, 3-243
 chemistry of, 2-126
 Fried Chicken Sausage, 3-249
 Low-Fat Chicken Sausage, 3-248
 chicken feet, Puffed Chicken Feet, 3-133
 chicken gizzard, cooking sous vide, parametric recipe for, 3-146
 chicken juice, parametric recipe for, 2-344–345
 chicken skin
 cooking methods for, 3-120–121
 Crisp Chicken Crown, 5-113, 116
 crisping by loosening, 3-123
 crispy cooking sous vide of, 3-131
 chicken stock, parametric recipe for, 2-296–298
 Chicken Tikka Masala, 3-204
 chickpeas
 Burmese Chickpea Tofu Laksa, 4-121
 cooking sous vide, parametric recipe for, 3-292
 puffed, parametric recipe for, 4-302
 Puffed Chickpea Salad, 5-135, 138
 Puffed Chickpeas, 4-307
 Child, Julia, 1-26, 83
 on sole meunière, 3-40
 Children’s Hospital, Oakland, California, 1-230
 Chile, wine innovation in, 4-332
 chili extract, parametric recipe for, 2-326
 chili peppers
 capsaicin in, 3-271
 Chili Pearls, 4-145
 Chili Tomato Spice Blend, 2-403
 choosing, 3-271
 dry, converting grams to volumes for, 5-XXXVIII
 infusion of, parametric recipe for, 2-310
 Piquillo Pepper and Strawberry Salad, 5-277, 278
 preserving, parametric recipe for, 3-348
 rating, science of, 3-270
 Romesco Sauce, 2-419
 Spiced Chili Oil, 2-330
 Chilled Chicken-Noodle Soup, 4-238
 chilling. *See also* chilling water baths; cook-chill sous vide methods; freezing; refrigeration; refrigerators of a carcass, 3-35
 food safety and quality and, 2-252, 254, 256
 in sous vide cooking, 2-242
 strategies for, 2-255
 chilling water baths
 for Modernist kitchen, 2-285
 physics of not halting cooking with, 2-254
 technology of, 2-238
 chimneys, air flow up, 2-7
 China
 aristocratic food in, 1-8
 fermented meats in, 3-246
 tradition and evolving cuisine of, 1-15
 Chinese artichokes, cooking sous vide, parametric recipe for, 3-292
 Chinese banquet stock, parametric recipe for, 2-296–297
 Chinese everyday stock, parametric recipe for, 2-296–297
 Chinese ginger soy fish broth, parametric recipe for, 2-304–305
 Chinese restaurant headache, MSG and, 1-213
 chinois, cone-shaped, 2-351
 chips. *See also* fruit chips; vegetable chips
 dehydrating formula for, 3-367
 chives, freeze-drying, parametric recipe for, 3-372
 chlorine, in municipal water, 1-335
 chlorophyll
 in green vegetables, 2-267
 hard water and, 3-278
 chlorophyllase, 2-267
 chocolate
 Aerated Chocolate, 4-313
 Chocolate Chantilly, 4-281
 conching of, 2-404
 foam bars, forming, 4-254
 Mayans and, 1-13
 melted, solidified to frozen set foam, 4-247
 chocolate cake with liquid center, evolution of, 1-15–16
 chocolate milk, as colloidal suspension, 4-176
 chocolate water, parametric recipe for, 2-374–375

- cholesterol
 characteristics of, 1-224
 dietary fat and, 1-222, 224–227
 health risks with low levels of, 1-226
 heart disease and, 1-227
 weight loss diets and, 1-242
- chopping, tools for, 3-230–233
- chorizo
 Chorizo Crisp, 5-193, 194
 Chorizo French Toast, 4-98–99
 Frozen Chorizo Powder, 5-193, 194
 parametric recipe for, 3-244–245
 Passion Fruit Marshmallow with Chorizo Powder, 4-290
- Choucroute Royale plated-dish recipe, 5-35–39
- chronic wasting disease (CWD), 1-159
- chufa milk
 Horchata (Chufa Milk), 4-59
 parametric recipe for, 4-56
- chufa nuts
 about, 5-244
 Horchata (Chufa Milk), 4-59
 Horchata Foam, 5-239, 244
- chymosin, as gel coagulant, 4-70
- cinnamon cap mushrooms, Preserved Cinnamon Cap Mushroom, 5-219, 220
- cinnamon extract, parametric recipe for, 2-326
- cinnamon infusion, parametric recipe for, 2-310
- Cinnamon-Scented Pea Juice, 5-273, 275
- cipolline onions, Sweet-and-Sour Cipolline Onions, 5-17, 19
- circulating water baths, 2-232, 234–235, 237
- citric acid
 as acidifier, 2-314
 for cold gels, parametric recipe for, 4-140
 for sausage, 3-227
- citron, Buddha's hand
 Buddha's Hand Vodka, 2-389
 cooking sous vide, parametric recipe for, 3-291
 distillation of, 2-388
- Citrus Air, 4-265
- citrus extract, parametric recipe for, 2-326
- citrus fruits. *See also specific fruits*
 dehydrating, parametric recipe for, 3-366
 heat-treating, parametric recipe for, 3-359
 juice of, as acidifier, 2-314, 315
 preserving, parametric recipe for, 3-348
- citrus oil, washing, how to, 2-321
- citrus press, 2-332, 335
- Citrus Spice, 2-404
- city roast stage, of coffee, 4-362
- civet, Asian palm, Kopi Luwak coffee and, 4-360
- civilization, definition of, 1-7
- CJD (Creutzfeldt-Jakob disease), 1-157–159, 160
- clams
 biology of, 3-26, 27
 Clam Juice, 5-229, 230
 cooking sous vide, parametric recipe for, 3-103
 fecal contamination of, 1-117
- clams (*continued*)
 geoduck
 biology of, 3-27
 cooking sous vide, parametric recipe for, 3-108
 Geoduck with Seawater Foam, 4-266
 Marinated Geoduck, Young Ginger, Shiso, 5-197, 200
 Pen Shell Clam, Pluot, Myoga, Scallop Mochi, 5-197, 202
- razor
 cooking sous vide, parametric recipe for, 3-103
 noroviruses and, 1-155
 Razor Clam “Takoyaki,” 5-197, 199
 Razor Clam with Sauce Verte, 3-112
 Sous Vide Clam and Oat Risotto, 3-308
 Stuffed Clam, 5-229, 231
 Walnut Clam Marmalade, 5-229, 230
- clarified butter
 browned solids from, using, 4-212
 how to make, 4-213
- clarity. *See also opacity*
 thickener selection and, 4-15
- Clay Potatoes, 3-398
- cleaning. *See also food safety; hygiene*
 of coffee brewer and grinder, 4-396
 of combi ovens, 2-169
 of espresso machines, how to, 4-397
 of kitchens, 1-200, 204
- Cliche, Michael, sous vide cooking and, 2-195
- climacteric fruits, ripening, 3-283–284
- climate, winemaking and, 4-328–329
- clinical trials. *See randomized clinical trials*
- cloning, wine and, 4-326–328
- Clorox, for kitchen cleaning, 1-200, 204
- Clostridium botulinum*
 canning and, 2-75
 food contamination by, 1-140
 food poisoning and, 1-132–133, 138–139
 pressure-canning and, 2-85, 88
 refrigeration and, 2-257
 replication of
 limits of, 1-145
 nisin and, 1-144–145
 sodium nitrites and, 1-144
- Clostridium perfringens*
 chicken and, 1-180
 food poisoning from, 1-138, 139, 141
 replication of
 limits of, 1-145
 nisin and, 1-144–145
 rate of, 1-142
- clotted cream, parametric recipe for, 4-56
- Clove Oil, 5-49, 52
- Clover coffee machine, 4-398
- CMC (carboxyl methylcellulose)
 interactions with other thickeners, 4-44–45
 product guide for, 4-IV–V
 properties and uses of, 4-42–43
- CO (carbon monoxide), to bloom myoglobin in meat, 3-95
- CO₂. *See carbon dioxide*
- coagulants
 for gelling. *See coagulants for gelling*
- coagulants (*continued*)
 protein, 4-103
 sequestrants for removing, 4-72
 for thickening, 4-7, 71
- coagulants for gelling, 4-70, 71
 ion-based, 4-124–127
 how to use, 4-129
- coals
 faux. *See prune coals*
 glowing, pot-roasting and, 2-96
- coalescence, as emulsion failure, 4-210, 212
- Coarse Fat-Gel Sausage, 3-248
- coarse-ground sausages, 3-220, 222
 best bets for, 3-236–237
 cryoshattering for, 3-230
 parametric recipe for, 3-236–237
- Coca-Cola, 1-20, 22–23, 76
- cockles, cooking sous vide, parametric recipe for, 3-103
- cockscombs
 cooking sous vide, parametric recipe for, 3-146
 preparation of, 3-122
 Puffed Cockscomb, 3-133
- cocoa
 Cocoa Nib Curd, 4-105
 Cocoa Tjarin, 5-225, 227
- cocoa tjarin
 Cocoa Tjarin, 5-225, 227
 Cocoa Tjarin plated-dish recipe, 5-225–227
 parametric recipe for, 3-381
- coconut
 Caramelized Coconut Cream, 4-50
 Coconut Chutney Foam, 4-282
 Coconut-Lobster Emulsion, 5-185, 187
 preserving, parametric recipe for, 3-348
- coconut oil, chemistry of, 2-126
- cod
 cold-smoking, parametric recipe for, 3-210
 cooking sous vide, parametric recipe for, 3-102
 Ling Cod with Bergamot-Infused Milk, 3-103
 Miso-Cured Black Cod, 3-179
 Monkfish with Constructed Skin, 3-132
 Sous Vide Black Cod, 5-171, 173
 Steamed Cod with Cod Roe Velouté, 4-32
- cod roe, Steamed Cod with Cod Roe Velouté, 4-32
- coffee, 4-354–403. *See also coffee beans*
 adding cream to, physics of, 1-289
 Aerated Coffee Ice Cream, 4-312
 brewing. *See brewing*
 Cappuccino Foam, 4-266
 Coffee Butter, 5-211, 212
 cold-extraction system for, 2-286, 4-370, 371
 consistency in, 4-396–403
 cooking with, technique of, 4-371
- decaffeinated
 production process for, 1-256
 science of, 4-363
- espresso as. *See espresso*
- Fair Trade, economics of, 4-361
- grinders for. *See coffee grinders*
- Kopi Luwak, provenance of, 4-360
- coffee (*continued*)
 milk and, art of, 4-391–395
 Mushroom and Bacon Cappuccino, 4-275
 pod and capsule systems for, technology of, 4-400
 Seattle as capital of, history of, 4-398
 storing, practicalities of, 4-362
 tasting like a pro, how to, 4-365
- coffee beans
 burr grinders for, 2-401–402, 4-376, 378
 from cherry to, 4-358, 360–361
 for espresso, 4-374, 376
 Northern Italian roast for, 4-360
 grinding for espresso
 adjustments for, 4-388
 coarse vs. fine, 4-376, 378
 common problems with, 4-377
 grinders for. *See espresso grinders*
 how to, 4-377
 pregrinding and, 4-380
 processing methods for, 4-358
 roasting, stages of, 4-362
 roasting for flavor, 4-358, 360–361
 species of, 4-358
 surface area after grinding of, 2-290
- Coffee Butter, 5-211, 212
- coffee extract, parametric recipe for, 2-326
- coffee grinders
 breaking down food with, 2-400
 burr type
 dry-grinding with, 2-401–402
 quality of, coffee grind and, 4-378
 technology of, 4-376
- colloid mill for, 2-404
- dispensers, portafilter dosing and, 4-378
- fan cooled, 4-376, 378, 398
- hopper of, stale coffee in, 4-377
- quality of, coffee grind and, 4-378
- temperature of, coffee grind and, 4-376
- coffee infusion, parametric recipe for, 2-310
- coffeegeek.com, 4-398
- cohort studies, of nutrition, 1-220
- COI, 1-67. *See also Patterson, Daniel*
- cola brine, parametric recipe for, 3-168
- colanders, 2-351
- Colborne Lane, 1-70
- cold gels, parametric recipe for, 4-140–141
- cold liquids, thickened, parametric recipe for, 4-46–47
- cold shortening, of a carcass, 3-35
- cold-extraction coffee system, 2-286, 4-370, 371
- cold-shocking, physics of not halting cooking with, 2-254
- cold-smoking, 2-141–143, 3-361
- coleslaw
 Red Coleslaw, 5-67, 72
 White Coleslaw, 5-67, 72
- collagen
 in cephalopods, 3-24–25
 in cooking, role of, 3-80–81
 fat and
 incorporation into sausage, 3-224
 in meat, 3-15
 in fish, 3-20, 21
 gelatin formation from, 4-67

- collagen (*continued*)
 holding at specific temperature and, 2-247
 Jaccard tenderizers and, 3-51
 long, slow cooking and, 3-84
 in meat, 3-6
 meat tenderness and, 3-10
 muscle contraction and, 3-8–9
 shrinkage of, 3-79
 in skin, baking chicken upright and, 2-109
 skin shrinkage and, 3-116, 118
 of young vs. older animals, juiciness and, 3-79, 81
- collapse temperature, in freeze-drying, 2-446
- Collectramatic, 2-120–121
- colloid mills, 2-398–400
 for dry-grinding, 2-404
 features of, 2-416–417
 milling creamy nut butter with, 2-418–419
 for Modernist kitchen, 2-284
 for wet-grinding, 2-413–414, 416–419
- colloidal suspensions (colloids)
 blood as, 4-6
 description of, 4-12
 emulsified sausage as, 3-225
 reductions of, 4-11
- The Colonel's Chicken, 3-336
- colony-forming units (CFUs), 1-142
- color
 alteration of, when cooking cured meat or seafood, 3-165
 boiling to "fix," chemistry of, 2-63, 66
 of cow's milk, 4-202
 of crustaceans, molting and, 3-30
 of fresh juice, preserving, 2-338, 339
 gassing meat for, chemistry of, 3-95
 of meat
 cooking and, 3-93–94
 muscles and, 3-12, 14–15, 16–17
 myoglobin and, 3-92–93
 physics of temperature and, 1-291
 of plant foods
 cooking and changes in, chemistry of, 3-274–275
 drying and, 3-365
 of seafood, cooking and, 3-93–94
 wine taste and, 4-334–335, 338
- colorectal cancer, dietary fiber and risk of, 1-214–217
- Columbus, Christopher, 1-14
- Combal.Zero, 1-70
- ComBase Initiative, Growth Predictor (bacterial modeling) and, 1-147
- Combi Oven Rib Eye, 2-180
- combi ovens
 bacon and eggs cooked in, 2-174–175
 baking using, 2-106
 broccoli steamed in, 2-181
 calibration of, 2-163
 cooking in, 2-167–168
 cooking modes of, 2-155–157
 cooking strategies for, 2-170
 crisping skin with, 3-123
 drying in, 2-430, 431
 heat and humidity control in, 2-162–163
 improvement proposals for, 2-167
 invention of, 2-154
- combi ovens (*continued*)
 kitchen humidity and, 2-164
 for Modernist kitchen, 2-284
 omelet cooking in, 4-95
 pans for, 2-166
 pot-roasting using, 2-96
 program cooking with, 2-168–169, 172–173
 Rational. *See* Rational combi ovens
 rib eye recipe using, 2-180
 roasting chicken in, 2-178–179
 for sous vide cooking, 2-232, 239, 243
 water content of heated air in, 2-153
- Combi Oven-Steamed Broccoli, 2-181
- combination (combi) mode, in modern ovens, 2-156–157
- combustion, of wood, 2-137
- comminution, 3-230
- Compressed Dill Pickled Vegetables, 5-55, 58
- compressed fruits and vegetables
 example recipes for, 3-392–401, 5-285
 parametric recipe for, 3-390–391
- Compressed Green Apple, 5-211, 212
- Compressed Melon Terrine, 3-392
- Compressed Muscat Grapes, 5-109, 110
- Compressed Tomato, 5-11, 15
- compression, vacuum
 physics of, 2-213
 for plant food cooking, 3-286
 using chamber sealers, 2-214
- computer simulation models
 of bacterial growth, 1-147
 of cold-shocking effects on cooking, 2-254
 of flipping food for speed and evenness, 2-39
 of heat flows in roasting vs. baking, 2-33
 of heat transfer, 1-282
 of time for steaming vs. boiling, 2-73
- COMSOL, 1-282
- concentrates, 2-378–397
 cell dehydration in, 1-305
 freezing, 2-396, 397
 Genevac Rocket Evaporator for, 2-391–395
 reverse osmosis for, 2-396
 rotary evaporator for, 2-384–389
 strategies for, 2-379–380
 vacuum reduction for, 2-380–383
- concentrators, vacuum, 2-285, 379, 380
- conching, chocolate making by, 2-404
- concretes, solvent extraction of essential oils and, 2-320
- condensates
 definition of, 1-319
 film, steaming and, 1-319, 2-70
 from rotary evaporation, 2-390–391
 smoke, drenching food with, 2-149
- condensation. *See also* evaporation;
 humidity
 deep-frying and, 2-125
 energy transfer and, 2-70
 evaporative cooling as, 1-319–321, 325
 heat transfer with, 1-277
 stir-frying and, 2-48
- condensers, vacuum, essential oils and, 2-320
- Condrieu Butter, 5-171, 172
- conducting foods, pressure-canning and, 2-88
- conduction. *See also* conduction zone
 in cookware, 1-277–278
 in deep-frying, 2-117
 in foods, 1-279, 280–281
 pressure-canning and, 2-89
 freezing water and, 1-299
 heat transfer with, 1-277
 in panfrying, 2-42–43
 in shallow frying, 2-127
 underground, wine storage and, 4-345
 in various materials, 1-280–281
- conduction zone
 baking and, 2-108
 in steak frying, 3-75
 stir-frying and, 2-48
- confidence interval, of nutritional studies, 1-220
- confits, 2-128–131
 Artichoke Confit, 5-171, 172
 Chestnut Confit, 5-17, 18
 Confit Cure Mix, 3-179
 Confit Egg-Yolk Puree, 5-147, 148
 duck, curing for, 3-159
 Duck Leg Confit with Pommes Sarladaises, 3-178
 Garlic Confit, 3-354, 5-25, 60, 81
 Lobster Mushroom Confit, 5-185, 187
 Pink Grapefruit Confit, 5-225, 226
 safety considerations for, 2-128
 Smoked Potato Confit, 5-193, 195
 Sous Vide Duck Confit Pavé, 5-81, 82
 sous vide preparation of, 2-128–129
 Steelhead Trout Confit with Fennel Salad, 3-106
 Tomato Confit, 5-11, 55, 60, 62, 67
 traditional preparation of, 2-128, 130–131
- conformations, of prion diseases, 1-156, 158
- confounding effects, nutritional studies and, 1-219
- conjugation, plasmid transfer by, 1-133
- Connaughton, Kyle, 3-54
 Fluke Cured in Kombu recipe, 3-181
 Sous Vide Ponzu recipe, 2-313
- connective tissue
 aging of, 3-41
 barbecue stall and, 3-212
 baseball glove cut from pork shoulder and, 3-48
 blocking tuna and, 3-54–55
 of bones, 3-143–144
 brining and, 3-157
 cooking and, 3-76
 of tough cuts, 3-84
 in fatty tissue, 3-118, 145
 in heart meat, 3-142
 in kidneys, 3-141
 pounding and, 3-50
 sausage-making and, 3-224
 in skin, 3-116
 in sweetbreads, 3-140
 tenderizing of, 3-41
 with marinades, 3-192, 193, 195
 in tongue, 3-141
 tumbling and, 3-51
- conservation of mass, 1-331
- consommé
 Bagna Cauda Consommé, 5-229, 230
 best bets for, 2-374–375
 clarifying, 2-352
 crystal clear, 2-359
 example recipes for, 2-376–377
 Ham Consommé with Melon Beads, 4-48
 Oyster Consommé, 5-205, 206
 parametric recipe for, 2-374–375
 Pot au Feu Consommé, 5-49, 52
 Spring Garlic Consommé, 5-85, 86
 Strawberry Consommé, 5-277, 278
 vacuum filtering of, 2-354
- consommé madrilène, parametric recipe for, 2-374–375
- constant-rate period
 in baking, 2-106–107
 in deep-frying, 2-117
 in drying, 2-431
- constructed cheeses
 best bets for, 4-223
 example recipes for, 4-224–225
- constructed creams, 4-214
 Constructed Veal Cream, 5-31, 33
 example recipes for, 4-236–237
- Constructed Red Wine Glaze, 5-219, 221
- contamination
 by animal flesh, 1-117
 cross-contamination and. *See* cross-contamination
 environmental, 1-116, 117
 fecal
 animal, 1-116–117
 hygiene and, 1-196–197, 200
 plant foods and, 1-197
 by human spittle, 1-116, 117
 kitchen space and, 1-200
 microbial
 aerobic. *See* aerobic bacteria
 anaerobic. *See* anaerobic bacteria
 bad odors from sealed bags and, 2-214
 shellfish foraging and, 3-27–28
- continuous phase
 of cream, 4-203
 in emulsions, 4-199
 ratio of continuous phase to, 4-205
 in foams, 4-243
- controlled-vapor oven. *See* CVap water-vapor ovens
- convecting foods, pressure-canning of, 2-88, 89
- convection
 convection zone and, 2-48
 cooking using, 1-279, 281–283. *See also* convection baking; convection ovens
 forced, 1-282–283, 2-159
 freezing water and, 1-299
 heat transfer with, 1-277
 natural, 1-282, 283
 panfrying and, 2-42–43
- convection baking
 boundary layer and, 2-108, 110
 radiant heat and, 2-110–111
- convection cells, in natural convection, 1-283
- convection currents, boiling and, 1-315
- convection oven mode, combi ovens and, 2-157, 168

- convection ovens. *See also* convection baking
 drying in, 2-431
 forced convection, 1-282–283
 forced-convection steam ovens and, 2-239
 method of operation, 1-282–283
 TurboChef microwave oven and, 2-189
- convection steaming, in ovens, 2-156
- convection zone, stir-frying and, 2-48
- convenience food, corporate control of, 1-23
- Cook, Robin, 3-196
- cookbook writers, chefs as, 1-83
- cook-chill sous vide methods
 canning and, 2-204–205
 for food preservation, 2-252
 frigi-canning and, 2-84
 for storage, 1-206, 2-250
 vacuum packing for, 2-208–209
- cooked whole eggs, parametric recipe for, 4-78–79
- cooking. *See also specific cooking techniques and foods*
 corporate approach to, 1-22–24
 of early civilizations, 1-7–8, 10–13
 evolution of, 1-14–16
 history of origins of, 1-6–13
 history of Slow Food and, 1-23
 by hunter-gatherers and early farmers, 1-6–7
 Modernist. *See* Modernist cuisine
 New American cuisine, 1-28–29
 Nouvelle revolution in, 1-24, 26–31
 of plant foods under pressure, example recipes for, 3-301–303, 5-181
 revolution in, 1-18–20
 at low end, 1-20–22
 Nouvelle, 1-24, 26–31
 in 17th century France, 1-9
 of skin, example recipes for, 3-132–135
 sous vide. *See* sous vide
 traditional. *See* traditional cooking
- cooking times, food geometry and estimates of, 1-279
- cooktop. *See also* burners; stove top for Modernist kitchen, 2-287
- cookware. *See also* pans; pots; *specific types of cookware*
 aluminum
 conduction in, 1-280
 heat capacity of, 1-278
 cast iron, 1-278, 280
 ceramic, conductivity and, 1-277
 conductivity of, 1-277–278
- cooling. *See also* chilling; chilling water baths; cook-chill sous vide methods; freezing; refrigeration; refrigerators
 evaporative
 humidity and, 1-319–320
 oven temperatures and, 2-155
 of hot food
 food safety and, 1-205–206, 2-256, 2-257
 phase changes and, 1-290
 starchy plants and, 3-280, 282
 vacuum-assisted
 evaporation and, 1-321
 phase changes in, 1-290
- Copenhagen Pectin, 4-40
- Coppens, Kristof, 1-70
- copyright laws, chefs' recipes and, 1-70–71
- core temperature
 FDA Food Code on, 1-174
 heating to, food safety and, 1-191
- target
 holding food at, 2-247–249
 water bath hotter than, 2-243–247
 water bath set to, 2-243–245
- coriander extract, parametric recipe for, 2-326
- corked wine, 4-348–350
 rescuing, chemistry of, 4-349
- corks, for wine bottles, natural and synthetic, 4-344, 345, 346
- corn. *See also* popcorn
 cooking sous vide, parametric recipe for, 3-289, 292
 Corn Bread, 5-67, 76
 Corn Croquette, 3-341
 Corn Custard, 4-122
 Corn Foam, 4-273
 Corn Pebbles, 4-36
 Crispy Corn Pudding, 5-101, 104
 dehydrating, parametric recipe for, 3-366
 dried, Shrimp and Grits, 3-377
 freeze-drying, parametric recipe for, 3-372
 freezing to preserve flavor of, 3-374
 frozen, grits ground from, 3-376
 puffed, parametric recipe for, 4-302
 puree of, parametric recipe for, 2-425
 smoking, parametric recipe for, 3-362
- corn oil, chemistry of, 2-126
- corn starch, 4-20
 thickening with, parametric recipe for, 4-28
- corn syrup, flavor release by, 4-11
- corned beef cure, parametric recipe for, 3-169
- cornmeal, gelling properties of, 4-68
- Corriher, Shirley O., 1-44
- cotechino, parametric recipe for, 3-236–237
- Côtes-du-Rhône wine, early Greek traders and, 1-12
- cottage cheese, parametric recipe for, 4-104
- cottonseed oil, chemistry of, 2-126
- coulant, of Michael Bras, 1-40
- Counter Culture Coffee, 4-361
- Country Bread Crisps, 5-85, 86
- Coupe-Set, 2-410
- court bouillon, truite au bleu and, 3-40
- Courtine, Robert (La Reynière), 1-26
- covalent bonds, 1-296, 330
- covered sautéing, 2-58–61
 chao technique and, 2-54
 cutaway illustration of, 2-60–61
 searing or glazing before, 2-58
- covering brine, for accelerating brining, 3-166
- cow pumps, extruding gel noodles with, 4-139
- cow's milk. *See also* milk
 allergies to, 1-238
- cP (centipoise), 4-6
- CP Kelco, 4-40
- crab. *See also* crabmeat
 biology of, 3-28, 30
 liver fluke infections and, 1-124
- crabmeat
 Crab and Ginger Marble, 5-253, 255
 Crab and Pork Stock Spheres, 5-253, 256
 Crab Oil, 5-189, 190
 Dungeness Crab and Apple Roulade, 4-169
 Edamame Sheets, King Crab, Cinnamon Dashi, 4-118
 faux (surimi), 3-251, 388
 Marinated Crab Salad, 5-189, 191
 Puffed Crab Crackers, 5-189, 190
 Shellfish Stock, 5-185, 186
 Triple Dungeness Crab and Pork Stock Infusion, 5-253, 254
- Cracco, Carlo, 1-70
- Seafood Paper recipe, 3-188
- crack phases, in coffee roasting, 4-361, 362
- crackers
 puffed, parametric recipe for, 4-302
 Tapioca Starch Cracker, 4-303
- cracklings, water as foaming gas for, 4-254
- Craig, Lyman, 2-384
- cranberries, cooking sous vide, parametric recipe for, 3-288, 291
- crawfish/crayfish
 freshwater, biology of, 3-28
 liver fluke infections and, 1-124
 as seafood gel, 3-222
- CREA (Centre de Recherche et d'Études pour l'Alimentation), 1-43
- C-reactive protein, 1-227, 242
- cream. *See also* creams
 adding to coffee, physics of, 1-289
 Baked Potato Foam, 4-281, 5-193
 clotted, parametric recipe for, 4-56
 Corn Foam, 4-273
 Cromesquis, 3-340
 Eggplant Foam, 4-280
 emulsification into butter, 4-206
 as emulsion, viscosity of, 4-205
 emulsions and, 4-221
 heavy
 gums added to, 4-102
 organic food movement perception of, 1-253
 Herbed Cheese Spread, 4-57
 hydrating LA gellan with, 4-124–125
 Instant Crème Fraîche, 4-57
 Low Fat "Cream," 4-57
 as oil-in-water emulsion, 4-199, 201
 Poached Apple with Pecorino Foam, 4-276
 separating butterfat from, 2-366, 368
 for set foams, parametric recipe for, 4-288–289
 smoked, parametric recipe for, 4-100
 Smoked Potatoes with Vin Jaune Sabayon, 3-363
 whipped, hot and cold treatment for, 4-244, 248
 Whipped Butter, 4-286
 Yogurt Foam and Sweet Potato Chips, 4-287
- cream cheese
 Aerated Coffee Ice Cream, 4-312
 Crispy Cream Cheese, 4-63
 Creamed Spinach, 4-55
- Creamed Watercress, 2-426, 5-5
- creaming
 as draining in foams, 4-249
 as emulsion failure, 4-210, 218
- creams
 constructed, 4-214, 236–237
 Constructed Veal Cream, 5-31, 33
 making, best bets for, 4-56
 parametric recipe for, 4-56
- crema
 age of roasted coffee beans and, 4-361
 carbon dioxide and, 4-384
 chemistry of, 4-388
- crème anglaise
 Cauliflower Crème Anglaise, 4-89
 parametric recipe for, 4-85
- crème brûlée
 parametric recipe for, 4-85
 Parmesan Crème Brûlée, 4-88
- crème caramel
 parametric recipe for, 4-92
 Smoked Egg Crème Caramel, 4-101
- crème fraîche
 Caramelized Crème Fraîche, 5-25, 28
 Frozen Crème-Fraîche and Pine-Nut Cream, 2-411
 Red-Onion Cream, 3-68
- Creutzfeldt-Jakob disease (CJD), 1-157–159, 160
- Crilly, Grant, Prune Coals recipe, 5-17
- crimini mushrooms
 cooking sous vide, parametric recipe for, 3-289
 Crimini in Amber, 4-154
 Mushroom Broth, 5-11, 14
 Mushroom Ketchup, 5-11, 13
- Crisp Chicken Crown, 5-113, 116
- crisping skin
 approaches to, 3-123
 after cooking sous vide, 2-268
 of fish
 slime as key to, physiology of, 3-129
 small, how to, 3-130
 sous vide, 3-131
- crisps
 Black Sesame Rice Crisps, 4-304
 Gremolata Crisp, 5-60, 64
 Rice Crisp, 5-31, 32
 Crispy Beef and Shallot Salad, 5-43, 47
 Crispy Beef Strands, 5-43, 44
 Crispy Boiled Peanuts, 3-303
 Crispy Cauliflower plated-dish recipe, 5-281–283
 Crispy Corn Pudding, 5-101, 104
 Crispy Cream Cheese, 4-63
 Crispy Dosa, 3-355
 Crispy Duck Tongues, 5-81, 84
 Crispy Goat's Milk Ricotta Dumpling, 5-273, 274
 Crispy Halibut Cheek, 3-334–335
 Crispy Hay-Smoked Chicken plated-dish recipe, 5-113–119
 Crispy Okra, 5-90, 97
 Crispy Snapper Skin, 5-167, 168
 Crispy Sweetbreads, 3-150
- critical point, in phase diagrams, 1-302–303
- critical temperature
 bacterial replication rates and, 1-142–143
 for freeze-drying, science of, 2-453
 freeze-drying and, 2-444, 446

- Crljenak Kastelanski grapes, 4-326
 crock pots, 2-240
 Cromesquis, 3-340
 crosnes, cooking sous vide, parametric recipe for, 3-292
 cross-contamination
 dirty gloves and, 1-200
 E. coli O157:H7 outbreak of 2006 and, 1-172
 food safety standards and, 1-168–169
 foodborne pathogens and, 1-166
 gluten intolerance and, 1-239
 UV powder for tracking, 1-201
 crotchless portafilters, 4-385, 388, 398
 cruciferous vegetables. *See also specific vegetables*
 blanching, 2-214
 crustaceans. *See also* crabmeat; crabs; crawfish; lobsters; prawns; shrimp
 biology of, 3-28–31
 cutting of, 3-52
 Maillard reaction of, 3-87
 Cruz, Jordi, Olive Oil Noodles recipe, 4-146
 cryoconcentration, of wine, 4-330
 cryoextraction, of wine, 2-396
 cryogenic freezing, 2-456–467, 471–473
 characteristics of, 2-456, 458
 dry ice for, 2-458, 464, 466, 471–473
 food flavor and, 2-261
 ice crystal formation in freezers and, 2-257–258
 liquid nitrogen for, 1-308, 2-456, 458, 459, 460–463
 safety with, 2-464, 466, 467
 science of how liquid nitrogen boils and, 2-457
 tartares and raw meat preparation with, 3-62
 cryogenics
 definition of, 2-456
 late 19th-century research on, 1-60
 for quick freezing, 1-308
 cryogens, 2-456. *See also* dry ice; liquid nitrogen
 culinary life of, 1-60–66, 68, 70
 safe handling of, 2-464, 466, 467
 spherification with, 4-184
 suppliers of, 2-458
 cryograting, how to, 2-461
 cryopoaching
 Cryopoached Dill Meringue, 5-161, 165
 Cryopoached Green Tea Sour, 4-291
 for Dippin' Dots, 1-61
 technique for, 2-460
 cryopowdering, how to, 2-461
 cryorendering
 of subcutaneous fat, 3-122
 before vacuum packing, 2-268
 cryosearing
 with dry ice, 2-464
 of duck breast, how to, 3-124–125
 with liquid nitrogen, 2-456, 458
 of skin and fat, 3-118
 of subcutaneous fat, 3-122
 cryoshaping, how to, 2-463
 cryoshattering
 for coarse-ground sausage, 3-230
 how to, 2-463
 of plant foods, to modify texture, 3-374
 for tartare, how to, 3-64
 cryospherification, 4-184
 Cryovac
 AGS system of vacuum packing and, 1-40
 Roux, sous vide cooking and, 1-41
 sous vide school and, 1-42, 43
 cryptosporidiosis, 1-129
Cryptosporidium parvum, 1-129
 Crystallized Rose Petals, 3-368
 cucumber chips, parametric recipe for, 3-328
 cucumbers
 compressing, parametric recipe for, 3-390
 Cucumber Black-Eyed Pea Salad, 5-94
 impregnating, parametric recipe for, 3-390
 Nukazuke, 3-354
 preserving, parametric recipe for, 3-348
 Salted Cucumber, 5-233, 236
 Sous Vide Cucumber Pickles, 3-353
 Cuisine Solutions, 1-43, 2-265
Le Cuisinier François (La Varenne, 1651), 1-8, 9
 cultures, bacterial, for fermented sausage, 3-246
 curds. *See* proteins, curds of
 Cured Beef Tenderloin “Bresaola Style,” 3-185
 Cured Ham Broth, 5-81, 84
 cures
 example recipes for, 3-176–185, 5-17, 18, 43, 151
 parametric recipe for, 3-168–172
 curing
 accelerating strategies for, 3-166–167, 174–175
 best bets for, 3-172
 dry. *See* dry-curing
 drying with warm air and, 2-433
 for food preservation, 3-152
 functional ingredients for, 3-155
 nitrates, nitrites, and nitrosamines and, 3-160
 process of, 3-158, 160, 162, 165–166
 ripening after, 3-167, 173
 safety of, worrisome signs during, 3-164
 salts for. *See* salts, curing
 time and salt concentration for, 3-154
 wet. *See* wet-curing
 curries. *See also* curry sauces
 for flavor and preservation, 3-196–197
 Curry Oil, 2-331
 curry sauces
 Goan Curry, 5-90, 91, 95
 Kerala Curry, 5-90, 91, 96
 Masala Curry, 5-90, 91, 98
 Mughal Curry Sauce, 5-89, 90, 92
 Muslim Curry Sauce, 5-89–91, 93
 Curry-Impregnated Apple, 3-393
 custard
 Asparagus Royale, 4-94
 Bone Marrow Custard, 5-60, 63
 Boudin Noir Custard, 5-125, 127
 Cauliflower Panna Cotta, 4-142
 Chawanmushi, 4-96
 Corn Custard, 4-122
 Deep-Fried Custard, 4-120
 Gruyère Custard, 5-261, 264
 custard (*continued*)
 Hot Blood Pudding Custard, 4-221
 Japanese (chawanmushi), parametric recipe for, 4-92
 parametric recipe for, 4-84
 royale, parametric recipe for, 4-92
 Salmon Custard, 4-119
 Shellfish Custard, 4-162
 cutaway illustrations
 of baked turkey, 2-104–105
 of bao technique of stir-frying, 2-55
 of boiling à l'Anglaise, 2-64–65
 of boiling-water canning, 2-82–83
 of chao technique of stir-frying, 2-56–57
 of covered sautéing of vegetables, 2-60–61
 of CVap water-vapor oven, 2-160–161
 of deep-frying, 1-89, 2-118–119
 for depicting science of cooking, 1-84, 88–89
 of espresso machine, 4-402–403
 of Girardet method, 2-24–25
 of grilling, 2-8–9
 of heat loss from stove-top pots, 1-276
 of indirect grilling, 2-13
 of meat grinder, 3-229
 of microwave oven, 2-186–187
 of Pacojet, 2-408–409
 of pot-roasting, 2-94–95
 of pressure-canning, 2-90–91
 of pressure-cooking stock, 2-293–294
 of Ronco Showtime Rotisserie Oven, 2-34–35
 of sautéing, 2-46–47
 of searing a la plancha, 2-40–41
 of soufflé, 4-248–249
 of steak frying in skillet, 3-72–73
 of steaming, 2-72–73
 of stewing, 2-96–97
 of whipping siphon, 4-261
 of wok stir-frying, 1-88, 2-50–51
 cutting boards, kitchen hygiene and, 1-204
 cutting particles down to size. *See* particle size reduction
 cuttlefish
 biology of, 3-24
 cooking sous vide, parametric recipe for, 3-108
 Japanese cutting of, 3-52
 CVap water-vapor ovens
 bacon and eggs cooked in, 2-174–175
 cooking modes of, 2-155–156, 169
 cooking strategies for, 2-170
 cutaway illustration of, 2-160–161
 forced convection in, 2-159
 heat and humidity control in, 2-158–159
 improvement proposals for, 2-167
 invention of, 2-154
 CWD (chronic wasting disease), 1-159
 cyanide
 bitter almond aroma of, 3-262
 cassava cooking by South American natives and, 1-6
 cyclamate, as banned additive, 1-252
Cyclospora cayetanensis, 1-129
 cyclosporiasis, 1-129
 cysteine, 3-89
 cysticercosis, 1-124
 cytochrome, 3-12, 94
 D (decimal) level reductions
 1D or 12D, for sanitizing food, 1-148, 149
 of pathogens in food, 1-166, 168
 Dacosta, Quique
 aesthetics of nature in dishes of, 4-37
 Frozen White “Truffle” recipe, 3-400–401
 Kanpachi Sashimi with Citrus Foam recipe, 4-269
 Lemon Verbena and Peach Froth recipe, 4-273
 liquid nitrogen cooking by, 2-459
 Modernist cuisine and, 1-57
 “Into the Vegetable Garden” and, 3-294
 Daguin, André, liquid nitrogen and, 1-60–61, 62, 65
 Daguin, Ariane, 1-61
 daikon radishes, cooking sous vide, parametric recipe for, 3-289
The Daily Cleveland Herald, 3-220
 dairy brine, parametric recipe for, 3-168
 dairy products. *See also specific dairy products*
 emulsions, 4-218–229
 example recipes for, 4-219–221
 foaming agents and, 4-251
 gels, 4-102–123
 example recipes for, 4-105–111, 114, 117, 120, 122
 parametric recipe for, 4-116–117
 pasteurization of
 FDA Food Code on, 1-187, 188–189
 simplified cooking standards for, 1-190, 191, 192
 smoking
 best bets for, 4-100
 parametric recipe for, 4-100
 typical
 fat content of, 5-XLIII
 water content of, 5-XL
 Dairy-Free Whipped Cream, 4-283
 Dal Pescatore, 1-28
 Dalton's law of partial pressures, 2-87
 “danger zone,” 1-175–179
 microbial growth patterns and, 1-175
 misconceptions about, 1-175–176, 178–179
 Salmonella growth and, 1-177
 Dannon yogurt
 for American tastes, 1-20–21
 as fast, ready-to-eat food, 1-22–23
 dark cutter meat, 3-35
 dark meat. *See also* red meat
 in chickens and turkeys, 3-12
 in ducks vs. chickens, 3-16–17
 flavor of, 3-15
 in sedentary animals, 3-14
 DART 1 (Diet and Reinfarction Trial), 1-232
 DASH (Dietary Approaches to Stop Hypertension) trials, 1-234, 236, 237
 dashi
 Bacon Dashi, 2-308
 Dashimaki Tamago, 4-94
 Edamame Sheets, King Crab, Cinnamon Dashi, 4-118
 Hon Dashi, 2-306, 5-197

- dashi (*continued*)
 parametric recipe for, 2-304–305
- dates
 cooking sous vide, parametric recipe for, 3-290
 Date Puree, 5-121, 122
- de Landa, Bishop Diego, of Yucatán, 1-13
- De re coquinaria*. See *Apicius*
- de Serres, Pierre
 Freedom Cooking System of, 2-240
 sous vide at home and, 1-73
- dealcoholization, in viticulture, 4-331
- deaths
 bacterial, 1-148–151
 pasteurization and sterilization for, 1-149
 thermal death curves of, 1-150–151
 human
 from botulism vs. toxoplasma, 1-118
 foodborne illnesses and, 1-113
 from foodborne microorganisms, 1-113
 U.S. rates for foodborne illnesses vs. other causes of, 1-118
- decaffeinated coffee
 espresso, temperature settings and, 4-374, 385
 production process for, 1-256
 science of, 4-363
- decanting wine, 4-342–343
- deception, culinary, 3-388–401
- decoction, in coffee brewing, 4-364
- deconstruction
 Adrià on elBulli cooking and, 1-37–38
 Blumenthal on, 1-51
- Deep-Fried Brussels Sprouts, 3-321
- Deep-Fried Cauliflower, 5-281, 283
- Deep-Fried Custard, 4-120
- Deep-Fried Hollandaise, 4-228
- deep-frying, 2-116–127
 baking compared with, 2-116–117
 batter coating for, 2-122, 127
 after cooking sous vide, 2-271
 crust and, 2-122–123
 cutaway illustration of, 1-89, 2-118–119
 equipment for, 2-287
 factors affecting oil coating of foods and, 2-127
 foam forming with, 4-258
 food size for, 2-117
 greasiness with, avoiding, 2-125, 127
 heat conduction in, 2-117
 heat transfer coefficient of, 1-283
 high-pressure, 2-120–121
 multistep, 2-122–123
 oil used for
 age of, 2-127
 chemistry of, 2-126
 fresh, 2-123
 new, breaking in, 2-123
 repeated use of, 2-123–125
 smoking of, 2-124
 temperature of, 2-116, 122, 123, 127
 overloading deep fryer and, 2-125
 under pressure, 2-120–121
 precooking food sous vide for, 2-123
 stages of, 2-116–117
 surface roughness of food and, 2-127
- deep-frying (*continued*)
 thickness of food and, 2-127
 water vapor in, 2-115, 116–117, 118–119, 125
- deer. See also venison
 chronic wasting disease in, 1-159
 hunters of, CJD-like disease in, 1-161
- defrost cycles, automatic, ice crystal formation and, 2-258
- Degeimbre, Sang-hoon
 Lychee and Lime Soda recipe, 4-268
 Modernist cuisine and, 1-70
- dehydrated foods, seasonal mélanges with, 3-295
- Dehydrated Garlic Chip, 5-43, 46
- dehydrating cabinets. See also drying
 features of, 2-431, 434–435
- dehydration. See drying
- dehydrators
 drying in, 2-430, 3-365
 for Modernist kitchen, 2-286
- deionized (DI) water, 1-335
 espresso-making and, 4-384
 hydrating ion-coagulated gels and, 4-124, 125
 for plant food cooking, 3-278
- Delhasse, Anthony, 1-70
- delicata squash, cooking sous vide, parametric recipe for, 3-289
- Les Délices de la Campagne* (Bonnefons, 1654), 1-9
- deliquescence, 2-428
- Demetrius of Phalerum, 1-13
- denaturing
 of collagen
 as gelatin, 3-78
 in living animals, 3-76
 holding at specific temperature as, 2-247
 of proteins, foaming and, 4-244
- Denia, 1-57
- Denominazione di Origine Controllata* (DOC), 4-332
- Denominazione di Origine Controllata e Garantita* (DOCG), 4-332
- density, heat capacity of cookware and, 1-278
- dental vibrator tray, for espresso tamping, 4-380
- deoxyhemoglobin, 3-93
- deposition
 definition of, 1-326
 sublimation vs., 1-329
- derivatives, mathematical, definition of, 2-230
- desiccants, food drying and, 2-428
- desiccation zone
 in baking, 2-107, 108
 in steak frying, 3-74
- desiccators, vacuum
 drying plants foods with, 3-365
 features of, 2-433, 436–437
 foam forming with, 4-310
 for Modernist kitchen, 2-286
- dessert trolleys
 disappearance from elBulli of, 1-35
 plated desserts vs., 1-25
- detergents, as surfactants, 4-202
- detox diets, 1-248
- Deviled Eggs, 4-81
- dew point, 1-325, 2-154
 on psychrometric charts, how to read, 1-323
- Dewar, James, 1-60, 66
- Dewar flasks
 for liquid nitrogen storage, 2-458
 Marshall and demonstration of, 1-60
 safe handling of, 2-467
 venting, 2-466
- DFD (dry firm dark), early rigor mortis and, 3-35
- DI (deionized) water, 1-335
 espresso-making and, 4-384
 hydrating ion-coagulated gels and, 4-124, 125
 for plant food cooking, 3-278
- diabetes, vegan diet and, 1-244
- Diamond, Jared, 3-268
- diaphragm, as sausage binder, 3-222–223
- diarrhea
 bacterial dispersal and, 1-134
 pathogens causing, 1-114, 126, 138, 155
 traveler's, 1-129
- Díaz del Castillo, Bernal, 1-13
- Dickens, Charles, 5-125
 on partridge, 5-132
- Diet and Reinfarction Trial (DART 1), 1-232
- Dietary Approaches to Stop Hypertension (DASH) trials, 1-234, 236, 237
- dietary systems
 dietary fiber in, 1-214–217
 medical, 1-222–239
 nonmedical, 1-240–249
 as rules for eating, 1-211
 testing disease risk and, 1-218–221, 258
- diets
 of animals, meat tenderness and, 3-11
 Atkins, 1-242
 colorectal cancer and, 1-214–217
 DART 1, 1-232
 DASH, 1-234, 236, 237
 detox, 1-248
 fat in. See fat, dietary
 fiber in. See fiber, dietary
 grapefruit, 1-240–241
 LEARN, 1-242
 low-carbohydrate, 1-242
 low-fat, 1-241
 Mediterranean, 1-232, 241, 242
 Shangri-La, 1-241
 South Beach, 1-242
 Spectrum, 1-242
 vegan, 1-244
 weight loss, 1-240–241
- differential scanning calorimeter (DSC), 1-268
- diffusion
 accelerating in brining or curing, 3-166–167
 in alcohol-based marinades, 3-195, 198
 in brining, 3-154, 156, 158
 in curing, 3-154, 160, 162, 164, 165
 in drying with salt and sugar, 3-346
 Fick's law of, 2-283, 290, 343
 in marinating, 3-190
 of water through food, drying actions and, 2-428
- diffusivity, thermal
 in cookware, 1-278
 of foods and various materials, 1-280–281
- digestion
 of caffeine, 4-363
 of carbon dioxide, 2-464
 of raw plants, biology of, 3-269
 of starches, 4-20
- digital scales
 gram-type, 1-94–95
 for measuring hydrocolloids, 4-38
 for Modernist kitchen, 2-286
 pocket-type, for measuring thickeners, 4-23
- digital thermometers
 accuracy issues with, 1-206–207
 for Modernist kitchen, 2-286
 for sous vide cooking, 2-240
 for testing refrigerator hot and cold spots, 2-257
- diglycerides, 4-216–217
- dill
 Carrot and Dill Fricassee, 5-161, 164
 Cryopoached Dill Meringue, 5-161, 165
 Dill Spheres, 4-130
- Dioscorides, Pedanius, 1-11
- Diphyllobothrium latum*, 1-124
- dipole molecules, 1-330
- Dippin' Dots, 1-61, 72
- discoloration, when cooking cured meat or seafood, 3-165
- disease names, etymology of, 1-119
- dish towels, cross-contamination and, 1-200
- disodium 5' guanylate, 3-160
- disodium 5' inosinate, 3-160
- dispersed phase
 in emulsions, 4-199, 205
 in foams, 4-243
 ratio of continuous phase to, 4-205
- dispersing
 approaches to, 4-20, 22
 of cellulosic gums, 4-127
 of hydrocolloids
 for gelling, 4-124
 for thickening, 4-38
 of thickeners, how to, 4-24
- dissolved materials. See also solubility
 boiling point and, 1-318
 freezing and, 1-304–305
 reductions of, 4-11
- distillation, 2-384–394
 example recipes for, 2-389
 Genevac Rocket Evaporator for, 2-391–395
 invention of, 2-390
 for purifying water, 1-335
 rotary evaporator for, 2-384–391
 U.S. laws on, 1-94, 2-384, 391
 vacuum, 2-380. See also rotary evaporators
- DNA
 testing genetic origins of grapes using, 4-326, 327
 in viruses, 1-152
- DOC (*Denominazione di Origine Controllata*), 4-332
- DOCG (*Denominazione di Origine Controllata e Garantita*), 4-332
- Don't Forget Fiber in Your Diet* (Burkitt), 1-214
- doorknobs, personal hygiene and, 1-200
- dose standard, for espresso shots, 4-380
- dosing, in espresso-making, 4-378, 380
- double ristretto, evolution of, 4-379

- double stocks, 2-290
- double-blind trials
for nutritional studies, 1-218–219
in wine tasting, 4-340, 342
- double-disc mills, 2-404
- Dover sole, aging effects on, 3-40
- DQ curing salt, 3-158
- draft, fire and, 2-7
- drag, convection baking and, 2-110
- dragon fruit, compressing and
impregnating, parametric recipe for,
3-390
- draining, in foams, 4-249
- Dried Cherry and Hazelnut Nougatine,
5-267, 270
- dried fermented sausages, 3-246, 250
- drip coffee maker, automatic, 4-368
- drippings
flares from, aluminum foil in grills
and, 2-15
flavor of grilled food and, 2-12
- dry boxes, 2-431, 434–435. *See also*
drying
- dry firm dark (DFD), early rigor mortis
and, 3-35
- dry ice, 2-458
carbonating fruit with, 2-472
carbonating liquids with, 2-464
freezing using, 1-310, 311
safe handling of, 2-464, 466
sublimation and, 1-326
suppliers of, 2-458
truffles, storing with, 2-471
- dry process, for coffee, 4-358
- dry rubs
basic, parametric recipe for, 3-169
best bets for, 3-168, 169
functional ingredients in, 3-155
Kansas Rub, 5-66, 68
Memphis Rub, 5-66, 68
parametric recipe for, 3-168–172
sweet, parametric recipe for, 3-169
- dry-aging meat, 3-41
how to, 3-42
- dry-bulb temperature
braising or pot-roasting in ovens
and, 2-96
consistent baking and, 2-111
in CVap water-vapor oven,
2-158–159
in deep-frying, 2-116
ordinary ovens and, 2-155
preheating to, 2-103
on psychrometric charts, how to
read, 1-323
in Rational combi oven, 2-164–165
relative humidity and, 1-322
smoking and, 3-211
wet-bulb temperature vs., 2-96, 102,
106, 112
- dry-curing
equilibrium, 3-165
for food preservation, 3-152
osmosis and, 3-154
salinity for, 3-160
- dryers, vacuum, 2-430, 433, 436–437
- dry-grinding, equipment for,
2-401–402, 404, 407
- drying, 2-428–455. *See also* curing
in baking, stages of, 2-106–108
characteristics of, 2-428
with cold, dry air, 1-326, 328
in cold-smoking, 2-143
- drying (*continued*)
in combi oven, convection mode for,
2-168
crisping skin and, 3-123
desiccants and, 2-428
desiccation zone and
in baking, 2-107, 108
in steak frying, 3-74
equipment for, 2-286
freeze-drying and. *See* freeze-drying
by hunter-gatherers, 1-6
liquid smoke and, 2-149
of meat and seafood, 3-152–189
of plant foods, 3-365–373
progressive smoking and, 2-148
rehydration and, physics of, 1-321
ripening of cured meat or seafood
and, 3-173
with salt and sugar, 3-344, 346, 348
spray-drying and, 2-438–443
equipment for, 2-285, 430
method for, 2-442
strategies for, 2-430
tapeworms and, 1-124
vacuum-assisted, 1-321, 2-215
vacuum-drying and, 2-430, 433,
436–437
with warm air, 2-431–433, 434–435
- DSC (differential scanning
calorimeter), 1-268
- Ducasse, Alain
Asparagus Royale recipe, 4-94
Gras, Laurent and, 1-69
Jus de la Presse recipe, 2-347
on Modernist cuisine, 1-63
New International cuisine and, 1-30,
31
Rib Eye with Cherry Mustard
Marmalade and Porcini recipe,
3-97
sous vide cooking and, 1-42
- duck
brining, parametric recipe for, 3-172
cooking sous vide, parametric recipe
for, 3-99, 108
cryorendering before vacuum
packing, 2-268
cryosearing, how to, 3-124–125
curing, parametric recipe for, 3-172
Duck Apicius plated-dish recipe,
5-121–123
Duck Broth with Vanilla and Bay
Leaf, 5-109, 110
Duck Leg Confit with Pommes
Sarladaises, 3-178
foie gras and. *See* foie gras
meat color of chicken vs., 3-16–17
Mouillard, for foie gras production,
3-138
Sous Vide Duck Confit Pavé, 5-81,
82
Sous Vide Duck Ham, 5-85, 87
- duck eggs
Century Egg, 4-83
Liquid Center Duck Egg, 5-219, 220
- duck fat, chemistry of, 2-126
- duck foie gras. *See* foie gras
- Duck Leg Confit with Pommes
Sarladaises, 3-178
- duck skin
how to precook, 3-82
leaving extra during butchery of,
3-116, 118
- duck stock, parametric recipe for,
2-296–298
- duck tongue
cooking of, 3-141
sous vide, parametric recipe for,
3-146
Crispy Duck Tongues, 5-81, 84
- Duffy, Curtis, 1-69
- Dufresne, Wylie
Achatz's meal at elBulli and, 1-38, 52
Aerated Foie Gras recipe, 4-311
Almond Polenta recipe, 4-36
Avocado Puree recipe, 5-205, 207
Barbecued Eel with Whipped
Caramel recipe, 4-283
Beignet of Sauce Ravigote recipe,
5-49, 51
Cheese Puffs recipe, 4-305
cold gels and, 4-140, 144
Corn Pebbles recipe, 4-36
Crispy Cream Cheese recipe, 4-63
Crispy Goat's Milk Ricotta
Dumpling recipe, 5-273, 274
critics on, 1-63
Deep-Fried Hollandaise recipe,
4-228
on dehydrating fruits and vegetables,
3-366
Edamame Sheets, King Crab,
Cinnamon Dashi recipe, 4-118
Edible Earth recipe, 4-37
Egg Salad Sandwich recipe, 4-90
Fermented Shrimp Sheets recipe,
5-167, 168
freeze filtration and, 2-369
Gruyère Spheres recipe, 4-190
Hanger Steak Tartare recipe, 3-65
Horseradish Foam recipe, 4-284
Instant Tofu Noodles recipe, 4-172
Knot Foie recipe, 4-144
Modernist cuisine and, 1-62, 67, 69
molded egg yolk tubes of, 4-90–91
Popcorn Pudding recipe, 4-181
Skate Pavé with Bread Crust recipe,
5-157
Sous Vide Duck Ham, 5-85, 87
Steingarten on, 1-65
Sunny-Side Up “Eggs” and,
14-148–149
- dulse, 5-28
- dumplings. *See also* gnocchi
Buckwheat Pelmeni, 5-233, 237
Crispy Goat's Milk Ricotta
Dumpling, 5-273, 274
Goat Cheese Dumplings, 4-105
soup, about, 5-254
Sour Cream Spaetzle (Csipetke),
4-117, 5-55, 59
Dungeness Crab and Apple Roulade,
4-169
Dunlop, Fuchsia, Gong Bao Chicken
recipe, 3-205
Durand, Peter, 2-75
Durand-Ruel, Paul, 1-19
- dynamic viscosity, 4-6
- East Texas BBQ Sauce, 5-66, 69
- Eating Quality Assured beef-grading
system, Australia, 3-39
- echinoderms, 3-30
- ecogastronomy, of Slow Food, 1-23
- École de La Varenne, 4-322–325
- ecological studies, of nutrition, 1-220
- Edamame Sheets, King Crab,
Cinnamon Dashi, 4-118
- edge sealers, 2-222–224
chamber sealers vs., 2-222
common problems with, 2-223
for Modernist kitchen, 2-284
rigid containers and, 2-226–227
vacuum packing with, 2-224
- Edible Bar Soap with Honey Bubbles,
4-267
- “edible earth”
Edible Earth, 4-37
Redzepi and, 3-294
- edible films, 4-6
best bets for, 4-60
Edible Wrappers, 4-62
parametric recipe for, 4-60
- edible glasses, 4-6
dehydrating formula for, 3-367
Pineapple Glass, 3-370
Spiced Honey Glass, 5-121, 123
- eel
Barbecued Eel with Whipped
Caramel, 4-283
cooking sous vide, parametric recipe
for, 3-102
- efficiency
energy, power and, 1-274–276
heat transfer coefficient and, 1-283
- Egg Blossom, 4-80
- egg emulsions, example recipes for,
4-226–229
- egg gels, 4-74–101
blended
best bets for, 4-92
parametric recipe for, 4-92
example recipes for, 4-80–81, 83,
86–91, 93–99, 101
parametric recipe for, 4-116–117
separated
best bets for, 4-85
parametric recipe for, 4-85
- Egg Salad Sandwich, 4-90
- egg white custard, parametric recipe for,
4-85
- egg whites
droplets of, parametric recipe for,
4-85
as fining agents, 2-358–360
for fluid gels, 4-176
foams formed from, 4-247
Fried Egg Foam, 5-211, 212
Instant Swiss Meringue, 4-284
Microwaved Pistachio Sponge Cake,
4-294
with myosin for meat glue, 3-250
proteins of, as foaming agent, 4-244
for set foams, parametric recipe for,
4-288–289
Siphoned Soufflé à la Lorraine, 4-297
Steamed Blancmange, 4-296

- egg whites (*continued*)
 texture of, temperature and, 4-76–77
 as thermo-irreversible gels, 4-70
- egg yolks
 Basic Mayonnaise, 4-226, 5-233
 Cauliflower Crème Anglaise, 4-89
 Confit Egg-Yolk Puree, 5-147, 148
 Deep-Fried Hollandaise, 4-228
 droplets of, parametric recipe for, 4-85
 Dufresne's molded tubes of, 4-90–91
 Egg Salad Sandwich, 4-90
 Egg Yolk Confit, 5-211, 213
 for fluid gels, 4-176
 parametric recipe for, 4-177
 Freeze-Dried Egg Yolk, 5-247, 250
 Gruyère Soufflé, 4-301
 for light foams, parametric recipe for, 4-270
 Parmesan Crème Brûlée, 4-88
 proteins of, as foaming agent, 4-244
 Sauce Allemande, 4-88
 Scrambled Egg Foam, 5-215, 216
 for set foams, parametric recipe for, 4-288–289
 as sliceable gel, 4-74
 parametric recipe for, 4-85
 Smoked Potatoes with Vin Jaune Sabayon, 3-363
 Sous Vide Instant Hollandaise, 4-228
 Sous Vide Lemon Curd, 4-227
 Steamed Blancmange, 4-296
 as surfactant emulsifiers, 4-226
 temperature, and texture of, 4-76–77
- Eggless Citrus Curd, 4-234, 5-157
 Eggless Mayonnaise, 4-232
- eggplant
 compressing, parametric recipe for, 3-390
 Eggplant Foam, 4-280
 impregnating, parametric recipe for, 3-390
 preserving, parametric recipe for, 3-348
 smoking, parametric recipe for, 3-362
 Stuffed Smoky Braised Eggplant, 5-99
- eggplant chips, parametric recipe for, 3-328
- eggs, 4-83. *See also* duck eggs; egg gels; egg whites; egg yolks; quail eggs
 allergies to, 1-238
 baked, two-stage, parametric recipe for, 4-85
 baked-good foams and, 4-245
 boiled, 2-63
 Chawanmushi, 4-96
 cold-smoked, parametric recipe for, 4-100
 cooked whole, 4-74–75
 parametric recipe for, 4-78–79
 Cromesquis, 3-340
 Deep-Fried Hollandaise, 4-228
 Deviled Eggs, 4-81
 Dufresne's obsession with, 1-67
 Egg Blossom, 4-80
 Egg Salad Sandwich, 4-88
 Eggs Benedict, 4-86
 emulsions of, 4-226–229
 fat content of, 5-XLIII
- eggs (*continued*)
 faux
 “Poached” Egg, 4-195
 Prosciutto and Melon “Raw Egg,” 4-194
 FDA Food Code on, 1-184, 185–186, 187
Salmonella and, 1-183, 185
 FDA safe cooking standards for, 1-170
 fluid gel properties of, 4-16
 fluid gels based on, 4-176
 development of, 1-66, 68
 parametric recipe for, 4-177
 foam forming with, 4-247, 251, 255
 Freeze-Dried Egg Yolk, 5-247, 250
 freeze-drying, parametric recipe for, 2-451
 French Scrambled Eggs, 4-93
 fried, two-stage, parametric recipe for, 4-85
 Ham and Cheese Omelet, 4-95
 Hot Egg Mayonnaise, 4-227
 hot-spring (onsen), 4-75
 parametric recipe for cooking, 4-78
 L'Arpège egg, 5-211
 Lemon Egg-Yolk Fluid Gel, 4-180
 Liquid Center Duck Egg, 5-219, 220
 marinated in vinegar, 4-75
 Miso-Cured Egg Sheets, 4-87
 Omelet Base, 5-215, 217
 omelets in combi oven vs. conventional oven, 4-95
 pasteurization of, 1-191, 4-226
 FDA Food Code and, 1-185
 pasteurized, parametric recipe for cooking, 4-78
 peeling with liquid nitrogen, how to, 4-78
 pickled
 best bets for, 4-82
 parametric recipe for, 4-82
 plated-dish recipes for, 5-209–221
 poaching, physics of stirring pot before, 2-67
 preserved
 best bets for, 4-82
 parametric recipe for, 4-82
 Pressure-Cooked Egg Toast, 4-97
 safe cooking principles for, 1-194
 salmonella contamination of, 1-117
 as sausage binders, 3-223
 Scrambled Egg Foam, 5-215, 216
 simplified cooking standards for, 1-192
 smoked, parametric recipe for, 4-100
 Smoked Egg Crème Caramel, 4-101
 Soft-Boiled Egg and Garlic Emulsion, 4-227
 textures of, 4-76–77
 thickening with, 4-13
 volumetric equivalents for amounts of, 5-XLIV
- Eggs Benedict, 4-86
 eGullet.org, 1-73
 Egypt, ancient
 foie gras production in, 1-13, 3-136
 food-related professions in, 1-7
 Herodotus on beans in, 1-12
 Horchata drinks in, 4-59
 locust bean gum used in, 4-124
 Einstein, Albert, 1-264
 Ekman pumping, phenomenon of, 2-67
 elasticity, gel selection and, 4-73
- elastin
 in abalone and cuttlefish membranes, 3-52
 in gizzards, 3-141
 in heart meat, 3-142
- elBulli. *See also* Adrià, Ferran
 first meal at, experience of, 1-38–39
 Modernist cuisine and, 1-33–40
- elBullitaller, 1-35
- Elder Flower Vinegar, 2-315
- electric broilers
 wood-fired oven-like performance by, 2-26–27
 working features of, 2-20–21
- electric coils, efficiency of, 1-274
- electric fields
 strong, to kill bacteria, 1-149
 wine storage and, 4-345
- electric griddles, 2-40
- electric whisks, foam forming with, 4-258, 4-259
- elements, physics of color indicators of temperature and, 1-291
- elk
 chronic wasting disease in, 1-159
 hunters, CJD-like disease in, 1-161
- emetic agents, *Bacillus cereus* as, 1-138
- emission spectra
 of blackbodies, 1-285
 physics of temperature and, 1-291
- emissivity
 of graybodies, 1-286
 of radiation, 1-285
- Emmental cheese, Restructured Emmental Slices, 5-11, 14
- emulsification. *See also* emulsifiers; emulsions; emulsion-style sausages
 Bancroft's rule on order for, 4-202
 mechanism of action, 4-200, 202, 204–205
 for thickening, 2-346, 4-19
- emulsifiers. *See also* emulsification; emulsions
 characteristics of, 4-200
 in deep-frying oil, 2-123, 125
 eggs as, 4-74
 immiscible substances and, 1-332
 oils and, 4-13
 surfactant, 4-216–217, 244
- emulsions, 4-196–239. *See also* emulsification; emulsifiers
 Black Butter Emulsion, 5-157, 158
 butter in, 4-218–220
 cheese as, 4-222–225
 common, 4-201
 constructed creams and, 4-236–237
 dairy, 4-218–229
 example recipes for, 4-219–221
 definition of, 4-13
 droplet sizes in, 4-206
 egg, 4-226
 example recipes for, 4-226–229, 5-233
 failure of, 4-210–212
 foams vs., 4-249
 G/W (gas-in-water). *See* foams
 HLB values and, chemistry of, 4-204
 of immiscible substances, 1-332
 methods for, 4-206–213
 microemulsions as, 4-205
 Modernist, 4-214–239
 nanoemulsions as, 4-238–239
 example recipes for, 4-238–239
- emulsions (*continued*)
 science of, 4-205
 optics of, physics of, 4-203
 other types of, example recipes for, 4-230–235
 particle size reduction for, 2-398
 reductions of, 4-11
 science of, 4-200, 202, 204–205
 stabilizers for, 4-215
 for thickening, 4-7
 thickening and longevity of, 4-5
 tools for, 4-208
 types of, 4-199
 vinaigrettes as, 4-230–231
 viscosity and, 4-204–205
 wet-grinding and, 2-412
- emulsion-style sausages
 best bets for, 3-238–239
 characteristics of, 3-222, 225
 Emulsified Sausage with Fat Gel, 3-248
 example recipes for, 3-242–243
 grinding fat and meat separately for, 3-231
 parametric recipe for, 3-238–239
- endemic pathogens, 1-110
- endive, cooking sous vide, parametric recipe for, 3-289
- endomysium, 3-6
- energy. *See also* heat; temperature
 in animal fat, 3-18
 converting power units and, 1-273
 defining, 1-264
 efficiency and, 1-274–276
 heat and, 1-263
 internal, 1-264–265
 of phase changes by water, 1-300–303
 power and, 1-272–273
- enflourage
 for flavor extraction, 2-320
 solids as solvents in, 1-330
 technique of, 2-323
- England. *See also* United Kingdom
 early gastronomy of, 1-8
 history of French chefs in, 1-8
 medieval cuisine in, 1-12
- English peas. *See* green peas
- enoki mushrooms
 Abalone and Foie Gras Shabu-Shabu with Yuba and Enoki, 5-197, 203
 cooking sous vide, parametric recipe for, 3-289
- Entamoeba histolytica*, 1-129
- enteritis necroticans, 1-141
- enthalpy, 1-300–301. *See also* latent heat of vaporization
- envelope, of viruses, 1-152
- environmental contamination, 1-116, 117
- Enviro-Pak smoker, 2-147
- enzymes
 aging meats and, 3-39, 41
 carbonation taste and, 2-465
 clarifying juice or broth with, 2-352
 cooking meat and seafood and, 3-76, 78–79
 as fining agents, 2-358
 freezing to halt action of, 3-136, 140
 fruit flavors and, 2-338
 as gel coagulants, 4-70
 gelling agents from, 4-126
 juice extraction with, 2-335, 336

- enzymes (*continued*)
 in liver, 3-138
 for marinating, 3-195
 in plant foods, 3-282–284
 protein-splitting, in crustaceans, 3-28
 thickening with, 4-13, 19
 transglutaminase as. *See* Activa; transglutaminase
- Enzyme-Treated Pink Grapefruit, 3-357
- epidemiology, nutritional, 1-218–220
- epimysium, 3-6
- equilibrium
 drying with salt and sugar and, 3-346
 thermal, cooking eggs to, 4-74, 75
 thermal energy transfer and, 1-266
- equilibrium brining, 3-158
 how to, 3-170–171
- equilibrium cooking
 in combi ovens, 2-167
 in water bath at core temperature, 2-243
- equilibrium dry-curing, 3-165
- equilibrium relative humidity, 2-430
- equilibrium vapor pressure, 1-320
- equilibrium wet-curing, 3-162, 165
 how to, 3-170–171
- equipment. *See also* tools; *specific types of equipment*; *specific tools*
 for broiling, 2-20–22
 for carbonation, 2-286
 chilling, for water baths, 2-285
 deep-frying, 2-287
 dry-grinding, 2-401–402, 404
 drying, 2-286
 for foams, 4-258–261
 freeze-drying, 2-285
 juicing, 2-332–335
 laboratory, local laws in U.S. on, 1-94
 milling, 2-401–402, 404. *See also* colloid mills
 pressure filtration, 2-286
 sieving, 2-286
 smoking, 2-146–147, 285, 3-208
 sous vide, 2-228–241
 for home use, 1-73
 spray-drying, 2-285, 430
 tenderizing, 2-286
 used in *Modernist Cuisine*, 1-93
 vacuum filtration, 2-286, 356–357
 wet-grinding, 2-412–414
- erg, 1-272
- Erice Conferences on Molecular and Physical Gastronomy, 1-44–46, 65
- erobertparker.com, 4-330
- escabeche, Oyster Escabeche, 5-205, 206
- Escherich, Theodor, 1-112
- Escherichia coli*, 1-116, 134, 137
- Escherichia coli* O157:H7
 foodborne illnesses and, 1-118–119
 outbreak of 2006, politics of, 1-172
 pathogenicity of, 1-132
 public health officials on outbreak of, 1-169–170
 temperature for reproduction of, 1-143, 144
 wine marinade with oregano and, 1-145
- Escoffier, Auguste
 aspics of, 4-68
- Escoffier, Auguste (*continued*)
 chateaufroid and, 4-151
 culinary rules and codes of, 1-5, 9, 19–20, 27
 on food presentation, 1-25
 introducing Modernist cuisine to, 1-56–57
 meat embedded in gelatin by, 3-250
 Sauce Allemande recipe, 4-88
 stockmaking by, 2-288
- escolar
 about, 5-175
 cooking sous vide, parametric recipe for, 3-102
 Escolar with Red Wine Butter, 3-104
 Tuna and Escolar Checkerboard, 5-175, 176
- espresso, 4-372–390
 art of milk and, 4-391–395
 brewing temperature for, skill for choosing, 4-385
 consistency in, 4-396–403
 cooking with, technique of, 4-371
- crema on
 age of roasted coffee beans and, 4-361
 carbon dioxide and, 4-384
 chemistry of, 4-388
- crotchless portafilters for, advantages of, 4-385
- decaffeinated coffee beans and, 4-363
- dosing of, 4-378, 380
- God shot of. *See* God shot
- grinding beans for. *See* coffee beans, grinding for espresso; espresso grinders
- grooming portafilter for. *See* grooming espresso portafilters
- instant, 4-371
- invention of, history of, 4-372
- in Italy, sociology of, 4-374
- machines for making. *See* espresso machines
- Northern Italian roast of beans for, 4-360
- pod and capsule systems for, technology of, 4-400
- pressure profiling and, technology of, 4-400
- pulling the shot and, 4-384, 388
 common problems with, 4-389
 how to, 4-386–387
 serving temperature of, 4-364
- single, double, and triple shots of, evolution of, 4-379
- stream of, monitoring, 4-384, 387, 388
- tamping and
 evenly, how to, 4-382
 reasons for, 4-383–384
 taxonomy of, 4-393
 tradition of, in cooking, 1-14
- Espresso Coffee: Professional Techniques* (Schomer), 4-399
- espresso con panna, 4-393
- espresso grinders
 how to use, 4-377
 for Modernist kitchen, 2-287
- espresso machines
 automatic brewing option of, 4-384
 cleaning, how to, 4-397
 cutaway illustration of, 4-402–403
- espresso machines (*continued*)
 hand-operated vs. electric, 4-372
 for Modernist kitchen, 2-287
 pressure profiling and, technology of, 4-400
 Synesso, 4-372, 374
- Espresso Vivace, 4-374, 396, 398, 399
- essences, aromatic, 2-318–331. *See also* extracting flavors
 in alcohol, best bets for, 2-326
 best bets for, 2-325
 citrus oil, how to wash, 2-321
 enfleurage and, 2-323
 extracting, 2-318, 320
 high quality, 1-250, 252
 natural, safe handling of, 2-324
 rotavap for distillation of, 2-384–391
 supercritical fluid extraction of, 2-320
 working with, 2-322
- essential oils. *See also* essences, aromatic
 for brining or curing, 3-158
 commercial uses for, 2-318
 steam distillation of, 2-318, 320
- Estragues, Sergi, 4-184
- ethanol. *See* alcohol (ethanol); spirits; *specific alcoholic beverages*
- ethics, of copying dishes, 1-71
- ethyl alcohol. *See* alcohol (ethanol); spirits; *specific alcoholic beverages*
- ethylene gas, fruit ripening and, 3-283–284, 285
- Ettore Majorana Foundation and Center for Scientific Culture, 1-44–46, 65
- Europe. *See also* European Union; *specific countries*
 lack of meat-grading system in, 3-36, 39
- European Union
 on food safety, 1-182
 food safety disclaimer rules of, 1-178
 trade dispute on food products and, 1-173
- evaporation, 1-314–325. *See also* water vapor
 adding cream to coffee and, 1-289
 during baking, 2-103, 107
 boiling on hot food and, 1-288
 boiling and, 1-315–319
 concentrating by, 2-379
 definition of, 1-314
 with Genevac Rocket Evaporator, 2-391–395
 humidity and, 1-319–321
 meat tenderness lost in braising or pot-roasting and, 2-98
 as reduction, 4-11
 steam and, 1-319
 vacuum
 for concentrating flavor, 2-380
 for reducing sauces, jus, or glazes, 2-346
 of wine, 4-330
 vacuum packing and, 2-213, 215
- evaporative cooling
 humidity and, 1-319–320
 oven temperatures and, 2-155
- evapotranspiration, winemaking and, 4-329
- Everything Bagel Broth, 4-130
- example recipes for acidifiers
 Elder Flower Vinegar, 2-315
 Seaweed Vinegar, 2-315
- example recipes for batter-frying
 The Colonel's Chicken, 3-336
 Crispy Halibut Cheek, 3-334–335
 Modernist Fried Chicken, 3-337
- example recipes for breading
 Cromesquis, 3-340
 Onion Rings, 3-342–343, 5-11
- example recipes for broths
 Bacon Dashi, 2-308
 Baked Potato Broth, 2-309
 Bouillabaisse Broth, 2-308
 Ham Broth, 2-306
 Hon Dashi, 2-306, 5-197
 Laksa Broth, 2-307
 Oxtail Pho Broth, 2-307
 Sous Vide Vegetable Stock, 2-303
 Tom Yum Broth, 2-309
- example recipes for carbonating
 Orange Soda, 2-472
 Strawberry Milk Shake, 2-473, 5-11
- example recipes for centrifugal evaporator, Mock Turtle Soup, 2-394
- example recipes for centrifuging
 Centrifuged Carotene Butter, 2-365, 5-185
 Centrifuged Pea Juice, 2-367
 Centrifuged Roasted-Hazelnut Oil, 2-367
 Tomato Water, 2-366, 5-5, 60
- example recipes for compressed and impregnated fruits and vegetables
 Clay Potatoes, 3-398
 Compressed Melon Terrine, 3-392
 Curry-Impregnated Apple, 3-393
 Fossilized Salsify Branch, 3-399
 Frozen White "Truffle," 3-400–401
 Pulled Mushroom, 3-396
 Squid-Ink Bean-Sprout Risotto, 3-397
 Vegetable Coals, 3-395
 Watermelon Meat, 3-394, 5-285
- example recipes for consommé
 Apple Cider Consommé, 2-377
 Oxtail Consommé, 2-376
 Pistachio Consommé, 2-376
- example recipes for constructed cheeses
 The American Cheese Slice, 4-224
 Cheddar Soup, 4-225
 Cheese in a Tube, 4-225
 Cheesy "Whiz," 4-225
- example recipes for constructed creams
 Hazelnut "Cream," 4-236
 Jus Gras, 4-237
 Pistachio Gelato, 4-236
- example recipes for cooking innards
 Ankimo Torchon, 3-147
 Crispy Sweetbreads, 3-150
 Foie Gras and Button Mushroom Tart, 3-148
 Foie Gras Soup with Bomba Rice and Sea Lettuce, 3-149
 Sweetbreads with Sour Mango Powder and Shiitake, 3-151
- example recipes for cooking plant foods under pressure
 Autoclaved Onion Soup, 3-302
 Caramelized Carrot Soup, 3-301
 Crispy Boiled Peanuts, 3-303
 Pressure-Cooked Sesame Seeds, 3-303, 5-181

example recipes for cooking skin

- Monkfish with Constructed Skin, 3-132
- Puffed Chicken Feet, 3-133
- Puffed Cockscomb, 3-133
- Ultracrisp Chicken Crown, 3-134–135

example recipes for cooking with moist air

- Cantonese Fried Rice, 2-176–177
- Combi Oven Rib Eye, 2-180
- Combi Oven-Steamed Broccoli, 2-181

example recipes for cures

- Bacon Chips with Butterscotch, Apple, and Thyme, 3-189
- Blackstrap Molasses Country Ham, 3-183
- Confit Cure Mix, 3-179
- Cured Beef Tenderloin “Bresaola Style,” 3-185
- Duck Leg Confit with Pommes Sarladaises, 3-178
- Fluke Cured in Kombu, 3-181
- Foie Gras Torchon, 3-176
- Grapefruit-Cured Salmon, 3-180
- House-Cured Bacon, 3-182, 5-17, 18
- Microwaved Beef Jerky, 3-184, 5-43
- Miso-Cured Black Cod, 3-179
- Salted Halibut, 3-187, 5-151
- Sea Urchin Bottarga, 3-186
- Seafood Paper, 3-188
- Shaved Foie Gras, 3-177

example recipes for dairy and tofu gels

- Burmese Chickpea Tofu Laksa, 4-121
- Corn Custard, 4-122
- Deep-Fried Custard, 4-120
- Edamame Sheets, King Crab, Cinnamon Dashi, 4-118
- Firm Tofu, 4-112
- Flourless Gnocchi, 4-119
- Fresh Cheese Curds, 4-106–107
- Goat Cheese Dumplings, 4-105
- Goat Milk Ricotta, 4-108
- Green Pea Yuba, 4-115
- Idiazábal Gnocchi, 4-123
- Milk Skin with Grilled Salsify and Truffle Puree, 4-114
- Modernist Burrata, 4-109
- Mozzarella Balloons, 4-110–111
- Peanut “Tofu,” 4-122
- Salmon Custard, 4-119
- Silken Tofu, 4-113
- Sour Cream Spaetzle (Csipetke), 4-117, 5-55, 59

example recipes for dairy emulsions

- Beet Flexicurd, 4-219
- Broiled Tuna Belly with Montpellier Butter, 4-220
- Hot Blood Pudding Custard, 4-221
- Poached Lobster, 4-219
- Ultrastable Beurre Blanc, 4-219

example recipes for dehydrated fruits and vegetables

- Crystallized Rose Petals, 3-368
- Mandarin Leather, 3-369
- Pineapple Glass, 3-370
- Spinach Paper, 3-369
- Sweet Pea Wafer, 3-371

example recipes for distilling

- Buddha’s Hand Vodka, 2-389
- Vacuum-Concentrated Apple and Cabbage Juice, 2-389

example recipes for egg emulsions

- Bacon Jam, 4-229
- Basic Mayonnaise, 4-226, 5-233
- Deep-Fried Hollandaise, 4-228
- Hot Egg Mayonnaise, 4-227
- Soft-Boiled Egg and Garlic Emulsion, 4-227
- Sous Vide Instant Hollandaise, 4-228
- Sous Vide Lemon Curd, 4-227

example recipes for egg gels

- Asparagus Royale, 4-94
- for blended egg gels, 4-93–99
- Cauliflower Crème Anglaise, 4-89
- Century Egg, 4-83
- Chawanmushi, 4-96
- Chorizo French Toast, 4-98–99
- for cooked whole eggs, 4-80–81
- Dashimaki Tamago, 4-94
- Deviled Eggs, 4-81
- Egg Blossom, 4-80
- Egg Salad Sandwich, 4-90
- Eggs Benedict, 4-86
- French Scrambled Eggs, 4-93
- Ham and Cheese Omelet, 4-95
- Miso-Cured Egg Sheets, 4-87
- Olive Marmalade, 4-99
- Parmesan Crème Brûlée, 4-88
- Pecorino with Truffle Honey on Cedar, 4-101
- Pickled Quail Eggs, 4-83
- for preserved and pickled eggs, 4-83
- Pressure-Cooked Egg Toast, 4-97
- Sauce Allemande, 4-88
- for separated egg gels, 4-86–91
- Smoked Egg Crème Caramel, 4-101
- for smoked eggs, 4-101

example recipes for emulsion-style sausages

- Boudin Blanc, 3-243
- Frankfurters, 3-242
- Italian Sausage, 3-242

example recipes for extracting flavor with alcohol

- Fines Herbes Extract, 2-327
- House Bitters, 2-327

example recipes for fermented sausage

- Fast-Cured Pepperoni, 3-247
- Saucisson Sec, 3-247

example recipes for fish and shellfish sous vide

- Escolar with Red Wine Butter, 3-104
- Ling Cod with Bergamot-Infused Milk, 3-103
- 19th-Century-Style Lobster with Sherry and Cocoa, 3-107
- Shrimp Cocktail, 3-107
- Steelhead Trout Confit with Fennel Salad, 3-106
- Turbot with Onion and Marrow Broth, 3-105

example recipes for flavor infusion into fats

- Curry Oil, 2-331
- Molasses Butter, 2-331
- Shellfish Butter, 2-329
- Sous Vide Lemon Herb Oil, 2-330
- Spiced Chili Oil, 2-330

example recipes for flavor-infused liquids, Sous Vide Ponzu, 2-313

example recipes for fluid gels

- Fizzy Grape Fluid Gel, 4-183
- Hot and Cold Tea, 4-182

example recipes for fluid gels (continued)

- Lemon Egg-Yolk Fluid Gel, 4-180
- Onion Fluid Gel, 4-183
- Parmesan “Polenta,” 4-181
- Passion Fruit Jelly, 4-180
- Popcorn Pudding, 4-181
- Umami Seasoning Fluid Gel, 4-183

example recipes for freeze-dried vegetables

- Caesar Salad, 3-373
- Freeze-Dried Onion Powder, 3-373, 5-261

example recipes for freeze-drying

- Freeze-Dried Beef Gravy Granules, 2-454
- Ramen Stock Powder, 2-455
- Ramen Vegetables, 2-455, 5-247
- Salted, Freeze-Dried Lobster, 2-454, 5-185

example recipes for froths, airs, and bubbles

- Cappuccino Foam, 4-266
- Citrus Air, 4-265
- Edible Bar Soap with Honey Bubbles, 4-267
- Geoduck with Seawater Foam, 4-266
- Kanpachi Sashimi with Citrus Foam, 4-269
- Lychee and Lime Soda, 4-268
- Oysters with Mignonette Air, 4-265

example recipes for fruit and vegetable chips

- Restructured Potato Chips, 3-330
- Watermelon Chips, 3-328

example recipes for fruit purees, Pistachio Puree, 2-427

example recipes for frying vegetables

- Deep-Fried Brussels Sprouts, 3-321
- Pectinase-Steeped Fries, 3-324
- Pommes Pont-Neuf, 3-323
- Starch-Infused Fries, 3-324
- Starch-Infused Ultrasonic Fries, 3-325
- Ultrasonic Fries, 3-325, 5-11

example recipes for grinding, milling, and pureeing

- Chili Tomato Spice Blend, 2-403
- Citrus Spice, 2-404
- Exotic Spice Mixture, 2-405
- Indies Spice Blend, 2-403
- Licorice Powder, 2-405
- Quatre Épices, 2-403, 5-35, 125
- Ras el Hanout, 2-405
- Romesco Sauce, 2-419
- Shrimp and Grits, 3-377

example recipes for hot- and cold-smoked meats and seafood

- Beef Cheek Pastrami, 3-213
- Russian Smoked Salmon, 3-212
- Smoked Octopus, 3-215

example recipes for hydrocolloid gels

- Agar Carbonara, 4-161
- Boeuf in Gelée, 4-163
- Cauliflower Panna Cotta, 4-142
- Chili Pearls, 4-145
- for cold gels, 4-141–149
- Crimini in Amber, 4-154
- Dill Spheres, 4-130
- Dungeness Crab and Apple Roulade, 4-169
- Everything Bagel Broth, 4-130
- Foie Gras Cherries, 4-153
- Foie Gras Parfait Spheres, 4-152

example recipes for hydrocolloid gels (continued)

- Foie Gras Torchon with Beet and Hibiscus Glaze, 4-158–159
- Guinness “Pâte de Fruit,” 4-145
- Halibut in Verbena Bubble, 4-156–157
- Hot Banana Gel, 4-166
- Hot Green Apple Gel, 4-166
- Hot Orange Gel, 4-167
- Hot Quince Gel, 4-167, 5-121
- Instant Tofu Noodles, 4-172
- Knot Foie, 4-144
- Long Island Iced Tea Gel Shot, 4-141
- Mackerel with Spicy Tomato Skin, 4-175
- Olive Oil Gummy Worms, 4-147
- Olive Oil Noodles, 4-146
- Potato Beignets with Caviar, 4-174
- Quinoa and Idiazábal with Bonito Stock Veil, 4-168
- Salmon Poached in Licorice, 4-155
- Shellfish Custard, 4-162
- Squid Ink Fluid Gel, 4-131
- Sunny-Side Up “Eggs,” 4-148–149
- Sweet Pea Clusters, 4-173
- Two-Meter Parmesan Spaghetti, 4-143

example recipes for hydrocolloid thickeners

- BBQ Caramels, 4-62
- Beef Tenderloin with Jus de Roti, 4-54
- Caramelized Coconut Cream, 4-50
- Creamed Spinach, 4-55
- Crispy Cream Cheese, 4-63
- Edible Wrappers, 4-62
- Ham Consommé with Melon Beads, 4-48
- Herbed Cheese Spread, 4-57
- Horchata (Chufa Milk), 4-59
- House Barbecue Sauce, 4-49, 5-67
- Instant Crème Fraîche, 4-57
- Lemon Strips, 4-61
- Low Fat “Cream,” 4-57
- Olive Oil Spread, 4-51
- Pressure-Cooked Polenta with Strawberry Marinara, 4-50
- Soy Milk, 4-58
- Toasted Almond Milk, 4-59
- Toasted Rice Milk, 4-59
- Tomato Whey Broth, 4-49
- Truffle Jus, 4-53
- Warm Potato and Pistachio Pesto Salad, 4-53
- White Grape Syrup, 4-52
- XO Sauce, 4-52

example recipes for infusing essences, Hazelnut Oil Extract, 2-321

example recipes for juicing

- Green Asparagus and Morels with Asparagus Jus, 2-341
- Melon Water, 2-340
- Meyer Lemonade, 2-340
- Sous Vide Berry Juice, 2-340

example recipes for jus

- Jus de la Presse, 2-347
- Lamb Garlic Jus in a Jar, 2-348, 5-25
- Mushroom Jus, 2-348
- Sous Vide Beef Juice, 2-349
- Sous Vide Mussel Juice, 2-346
- Sous Vide Prawn Jus, 2-347
- Sous Vide Rare Beef Jus, 2-349

- example recipes for jus (*continued*)
 Sous Vide Vegetable Jus, 2-347
- example recipes for light foams
 Blood Orange Foam, 4-272
 Corn Foam, 4-273
 Grapefruit and Black Pepper, 4-276
 Lemon Verbena and Peach Froth, 4-273
 Mushroom and Bacon Cappuccino, 4-275
 Oysters with Cava Foam, 4-277
 Poached Apple with Pecorino Foam, 4-276
 Sous Vide Sole with Bergamot Sabayon, 4-274
 Whipped Cheese, 4-272
- example recipes for marinating
 Beet Juice-Fed Oysters, 3-206, 5-233
 Chicken Tikka Masala, 3-204
 Fluke Ceviche, 3-203
 Gong Bao Chicken, 3-205
 Kalbi Flank Steak, 3-199
 Lutefisk, 3-200
 Tuna Ribbons with Ginger Marmalade, 3-202
 Yakitori, 3-201
- example recipes for microwaved vegetables
 Artichoke and Potato Chaat, 3-313
 Microwave-Fried Parsley, 3-312
 Sichuan Bok Choy, 3-313
 Tomato Powder, 3-312
- example recipes for Modernist sausages
 Coarse Fat-Gel Sausage, 3-248
 Emulsified Sausage with Fat Gel, 3-248
 Fried Chicken Sausage, 3-249
 Low-Fat Chicken Sausage, 3-248
 Rare Beef Sausage, 3-249
- example recipes for nanoemulsions
 Chilled Chicken-Noodle Soup, 4-238
 Ginger Cola, 4-239
- example recipes for other emulsions
 Black Olive Puree, 4-230
 Eggless Citrus Curd, 4-234
 Eggless Mayonnaise, 4-232
 Invincible Vinaigrette, 4-231
 Mustard Vinaigrette, 4-231
 Olive Oil “Margarine,” 4-235
 Spot Prawns with Foie Gras Nage, 4-233
 Thickened Oil, 4-230
- example recipes for Pacojet
 Frozen Cheddar-Cheese Powder, 2-411
 Frozen Crème-Frâiche and Pine-Nut Cream, 2-411
 Mozzarella Powder, 2-411
 Pacojet Pea Soup, 2-410
- example recipes for pasta
 Herb-Embedded Pasta Veil, 3-383, 5-253
 Mac and Cheese, 3-387
 Pad Thai, 3-385
 Pasta Marinara, 3-386
 Semolina Pasta, 3-382
 Spaghetti Carbonara, 3-384
- example recipes for pastas, Semolina Pasta, 3-382
- example recipes for potato purees,
 Potato Puree, 3-296
- example recipes for puffed snacks
 Black Sesame Rice Crisps, 4-304
 Cheese Puffs, 4-305
 Pommes Soufflées, 4-306
 Puffed Chickpeas, 4-307
 Scallop Mochi, 4-308–309, 5-197, 202
 Tapioca Starch Cracker, 4-303
- example recipes for risottos
 Pressure-Cooked Vegetable Risotto, 3-308
 Risotto Milanese, 3-306–307
 Root Vegetable Risotto, 3-309
 Sous Vide Clam and Oat Risotto, 3-308
- example recipes for Rocket Evaporator,
 Mock Turtle Soup, 2-394
- example recipes for salting, pickling,
 and fermenting
 Crispy Dosa, 3-355
 Enzyme-Treated Pink Grapefruit, 3-357
 Garlic Confit, 3-354, 5-25, 60, 81
 Kimchi, 3-352
 Nukazuke, 3-354
 Preserved Lemons, 3-350, 5-135
 Sauerkraut, 3-351
 Sous Vide Cucumber Pickles, 3-353
 Yuzu and Kumquat Marmalade, 3-356
- example recipes for set foams
 Beet Meringue, 4-295
 Cryopoached Green Tea Sour, 4-291
 Freeze-Dried Carrot Foam, 4-300
 Green Olive Meringue, 4-298
 Green Tea Cake, 4-292
 Gruyère Soufflé, 4-301
 Hot Apricot Marshmallow, 4-293
 Microwaved Pistachio Sponge Cake, 4-294
 Passion Fruit Marshmallow with Chorizo Powder, 4-290
 Siphoned Soufflé à la Lorraine, 4-297
 Soy Sauce Cloud, 4-299
 Steamed Blancmange, 4-296
 Whipped Yogurt Crisps, 4-292
- example recipes for smoked plant foods,
 Smoked Potatoes with Vin Jaune Sabayon, 3-363
- example recipes for spherification, 4-194
 Carbonated Mojito Spheres, 4-188
 Gruyère Spheres, 4-190
 Liquid Pimento Olive, 4-193
 Melon Caviar, 4-189
 Mussels in Mussel Juice Spheres, 4-191
 “Poached” Egg, 4-195
 Prosciutto and Melon “Raw Egg,” 4-194
 Tomato Spheres with Basil Oil, 4-192
- example recipes for spray dryer
 Spray-Dried Blood Orange Juice, 2-443
 Spray-Dried Buttermilk, 2-443
- example recipes for starch thickeners
 Almond Polenta, 4-36
 Bacon Powder Squares, 4-34
 Corn Pebbles, 4-36
 Edible Earth, 4-37
 Jerusalem Artichoke Pudding, 4-31
 Malt Vinegar Powder, 4-34
 Modernist Béchamel, 4-31
- example recipes for starch thickeners (*continued*)
 Parmesan Nuggets, 4-35
 Pregelatinized Starch Paste, 4-29
 Steamed Cod with Cod Roe Velouté, 4-32
 Thanksgiving Turkey Gravy, 4-33
 Turkey Wing, 4-33
 Vanilla Olive Oil Powder, 4-35
- example recipes for stocks
 Brown Beef Stock, 2-301
 Brown Veal Stock, 2-300
 Pressure-Cooked White Chicken Stock, 2-301
 Sous Vide Fish Stock, 2-303
- example recipes for tartares and raw meat
 Beef and Oyster Tartare, 3-66
 Hanger Steak Tartare, 3-65
 Red-Onion Cream, 3-68
 Salmon Tartare Cornets, 3-68
 Scallop Tartare, 3-67
- example recipes for tender meats sous vide
 Rib Eye with Cherry Mustard Marmalade and Porcini, 3-97
 Venison Loin Rossini, 3-98
- example recipes for tender poultry sous vide
 Pigeon with Shellfish Butter, 3-100
 Poulet au Feu d’Enfer, 3-100
 Quail with Apple-Vinegar Emulsion and Water Chestnuts, 3-101
- example recipes for thick foams
 Baked Potato Foam, 4-281, 5-193
 Barbecued Eel with Whipped Caramel, 4-283
 Chocolate Chantilly, 4-281
 Coconut Chutney Foam, 4-282
 Dairy-Free Whipped Cream, 4-283
 Eggplant Foam, 4-280
 Horseradish Foam, 4-284
 Hot Butter Foam, 4-283
 Instant Swiss Meringue, 4-284
 Uni with Whipped Tofu and Tapioca, 4-285
 Whipped Butter, 4-286
 Yogurt Foam and Sweet Potato Chips, 4-287
- example recipes for tough meats and shellfish
 Microwaved Tilapia with Scallions and Ginger, 3-115
 Pressure-Cooked Carnitas, 3-114
 Razor Clam with Sauce Verte, 3-112
 Sous Vide and Pressure-Cooked Veal Breast with Bulbous Vegetables, 3-111
 Squid Sicilian Lifeguard-Style, 3-113
 Suckling Pig Shoulder with Shallot and Orange Sauce, 3-110
- example recipes for vacuum-set foams
 Aerated Chocolate, 4-313
 Aerated Coffee Ice Cream, 4-312
 Aerated Foie Gras, 4-311
 Aerated Gruyère, 4-312
 Aerated Mango Sorbet, 4-311
- example recipes for vegetable purees
 Black Truffle Concentrate, 2-427, 5-216
 Broccoli and Hazelnut-Oil Puree, 2-426
- example recipes for vegetable purees (*continued*)
 Celery Root Mousseline, 2-427, 5-126
 Creamed Watercress, 2-426, 5-5
 exoskeletons, of crustaceans, 3-28, 30
 Exotic Spice Mixture, 2-405
 experimental cooking, McGee on, 1-57–58
 exponential growth, of bacteria, 1-142
 exsanguination, 3-32
 extenders, in sausage, 3-226
 extracellular fluid, in raw foods, 1-305–306
 extracting flavors, 2-288–317. *See also* essences, aromatic
 acidifiers and, 2-314–316
 with alcohol, 2-317
 example recipes for, 2-327
 parametric recipe for, 2-326
 coffee brewing and, 4-364
 cryoextraction of wine and, 2-396
 infused liquids, 2-310
 measuring salinity and, 2-313
 pressure-cooking for, 2-291–295
 salt for seasoning and, 2-312
 science of best tasting flavors and, 2-299
 size of ingredients and, 2-290–291
 sous vide technique of, 2-251
 for stocks, 2-296–298
 stocks as basis for sauces and, 2-288
 extraction percentage, brewing control chart on, 4-366–367
 extracts, in alcohol, best bets for using, 2-325
 exudate gum, 4-19

- facultative anaerobic bacteria, 1-130, 138
Fahrenheit 451 (Bradbury), 2-137
 Fahrenheit temperature scale, 1-266, 285
 Fair Trade coffee, 4-361
 falling-rate period
 in baking, 2-107–108
 in deep-frying, 2-116, 117
 Faraday, Michael, 1-60
 Farce Royale, 5-126, 132
 Farm Direct, Fair Trade coffee and, 4-361
 farmer's cheese, parametric recipe for, 4-104
 farming, early civilization and development of, 1-6–7
 fascicles, 3-6, 8, 11
Fasciola gigantica, 1-123
Fasciola hepatica, 1-123
 fascioliasis, 1-123
 fast food
 corporate control of, 1-22–24
 development of, 1-20–22
 fast hot-spring eggs, parametric recipe for cooking, 4-78
 fast hot-spring quail eggs, parametric recipe for cooking, 4-78
 Fast-Cured Pepperoni, 3-247
 fast-fermented sausages, 3-246
 fast-twitch muscles
 fat content and, 3-18
 in fish, 3-21
 in meat, 3-11–12
 meat color and, 3-14–15
 in scallops, 3-26
 slow-twitch muscles vs., 3-11–12
 fat, dietary
 beneficial forms of, 1-231–232, 234
 chemistry of, 1-233
 cholesterol and, 1-222, 224–227
 colorectal cancer risk and, 1-214
 heart disease and, 1-229–230
 obesity and, 1-243
 trans fat as, 1-230–231
 The Fat Duck. *See also* Blumenthal, Heston
 food poisoning at, 1-155
 food science and, 1-49–50
 plant food cooking at, 3-278
The Fat Flush Plan (Gittleman), 1-248
 fats
 around kidneys, 3-141
 characteristics and cooking with, 3-144
 cooking vegetables sous vide with, parametric recipe for, 3-292
 dietary. *See* fat, dietary
 extracting flavor with, 2-323
 flavor infusion into, parametric recipe for, 2-328–329
 flavor release and, 4-11
 as foam inhibitor, 4-257
 foams based on, 4-244, 247
 freeze-drying of, 4-447
 frictional heat and, 3-230
 grinding meat and, how to, 3-228
 in meat, 3-15, 18
 flavor and, 3-87–88
 fats (*continued*)
 rendering strategies for, 3-145
 saturated. *See also* cholesterol characteristics of, 1-222
 French cuisine and, 1-228
 in sausage, 3-223, 224–225
 in seafood, flavor and, 3-87–88
 separating from cream, 2-366, 368
 smoking, parametric recipe for, 3-362
 smoking meat or seafood and, 2-145
 subcutaneous
 cooking issues for, 3-118
 rendering, 3-122
 as tough cut, science of, 3-83
 truite au bleu and, 3-40
 in tuna, 3-21
 volumetric equivalents for amounts of, 5-XLIV
 in Wagyu beef, 3-19, 36
 washing, for flavor extraction, 2-320–321
 whipped cream and, 4-244
 fatty acids
 characteristics of, 1-222
 research on health and, 1-234
 faucet aspirators, 2-284, 356
 faucet handles, personal hygiene and, 1-200
 fava beans
 cooking sous vide, parametric recipe for, 3-292
 Fresh Bean Salad, 5-85, 87
 Fricassee of Fava Beans and Lychees, 5-171, 173
 FDA. *See* FDA Food Code; U.S. Food and Drug Administration (FDA)
 FDA Food Code
 on cooking times
 for beef, 1-121
 for chicken, 1-180, 181
 for lamb, 1-121
 for pork, 1-121, 179, 180
 specific cooking times and temperatures and, 1-184–189
 on “danger zone,” 1-175–179
 different foods and different rules of, 1-174–175
 egg pasteurization and, 1-185
 Salmonella time and temperature curves, 1-187
 on temperature but not time of cooking, 1-174
 temperature rounding in, 1-174
 on thermal death curves, 1-182–189
 understanding, 1-182–189
 fecal contamination
 animal, 1-116–117
 hygiene and, 1-196–197, 200
 plant foods and, 1-197
 fecal load, foodborne illnesses and, 1-115–116
 fecal-oral route, for foodborne pathogens, 1-116
 feline spongiform encephalopathy, 1-159
 femtograms, weight of bacteria in, 1-130
 fennel bulbs
 cooking sous vide, parametric recipe for, 3-289
 Steelhead Trout Confit with Fennel Salad, 3-106
 fennel seed extract, parametric recipe for, 2-326
 fermentation
 bacterial role in, 1-133–134
 in coffee processing, 4-358
 drying with warm air and, 2-433
 example recipes for, 3-352, 357
 hydrocolloids from, 4-124
 marinating and, 3-198
 parametric recipe for, 3-348–349
 of plant foods, 3-344, 346
 in winemaking, 4-330
 fermented pickles, parametric recipe for, 3-349
 fermented sausages
 best bets for, 3-244–245
 characteristics of, 3-222
 example recipes for, 3-247
 history of, 3-246
 immune-compromised people and, 3-223
 other ingredients in, 3-226–227
 parametric recipe for, 3-244–245
 preparation of, 3-246, 250
 Fermented Shrimp Sheets, 5-167, 168
 Fermento, for sausage, 3-227
 fiber, dietary
 colorectal cancer and, 1-214–217
 heart disease and, 1-216
 plants and, 3-267
 research on colon cancer and, 1-217
 Fick, Adolf, 2-290
 Fick's law of diffusion, 2-283, 290, 343
 fiddlehead ferns, Stir-Fried Fiddlehead Ferns, 5-113, 119
 figs
 compressing and impregnating, parametric recipe for, 3-390
 Pickled Figs, 5-135, 137
 preserving, parametric recipe for, 3-348
 fillers, sausage, 3-226, 231
 film boiling, 1-316
 film condensate, steaming and, 1-319, 2-70
 films, edible, 4-6
 best bets for, 4-60
 Edible Wrappers, 4-62
 parametric recipe for, 4-60
 filter paper
 for coffee brewing, 4-368
 for vacuum filtration, 2-354
 filtering, 2-350–377
 with agar, 2-372–373
 centrifuges for, 2-360–368
 for coffee brewing, 4-368
 decanting wine and, 4-342, 343–344
 fining agents for, 2-358, 360
 with gelatin ice, 2-368–371
 juice extraction and, 2-239
 by oysters, 3-27
 pressure, 2-353–355
 separating emulsions with, 4-212
 straining and sieving for, 2-351, 353
 strategies for, 2-352
 uses of, 2-351
 vacuum, 2-286, 4-352–358
 description of, 2-352, 358, 4-353–354
 equipment for, 2-286, 356–357
 how to, 2-357
 of wine, 4-344
 Fines Herbes Extract, 2-327
 fining
 agents for, 2-358–360
 with bentonite or polyclar, 2-352
 fino sherry, Sauce Vin Jaune, 5-113, 116
 fire
 draft and, 2-7
 for smoking, 3-208, 211
 fire bricks, as graybodies, 1-286
 Firm Tofu, 4-112
 Firmenich, 1-51
 Fischler, Claude, 1-26
 fish. *See also* specific types of fish
 aging, 3-41
 allergies to, 1-238
 anisakid infections and, 1-122–123
 biology of, 3-22–23
 Bouillabaisse Broth, 2-308
 brining, parametric recipe for, 3-172
 cold-smoking, parametric recipe for, 3-210
 combi ovens vs. water bath cooking of, 2-167
 cooking
 on bone, 2-243
 ideal temperature for, 3-89
 cooking sous vide
 best bets for, 3-102
 example recipes for, 3-103–106
 parametric recipe for, 3-102–103
 curing, parametric recipe for, 3-172
 cutting, 3-52
 dissolved oxygen for, 1-332–333
 fat oxidation in, 2-201
 FDA Food Code on, 1-170, 184, 185–186, 187
 Fish and Chips plated-dish recipe, 5-143–145
 flat, filleting, 3-57
 freezing, 1-194, 3-37
 freshwater, tapeworms and, 1-124
 frozen, 3-37
 ike jime slaughtering of, 3-35, 37
 Kanpachi Sashimi with Citrus Foam, 4-269
 plated-dish recipes for, 5-141–177
 safe cooking principles for, 1-191
 Seafood Paper, 3-188
 simplified freezing
 recommendations for, 1-192
 skin of. *See* fish skin
 slaughtering practices and, 3-35
 smoked, example recipe for, 3-212
 Sous Vide Fish Stock, 2-303
 sous vide for, 2-198
 spoiled, risks of, 1-139
 tender, cooking sous vide,
 parametric recipe for, 3-102
 tough, example recipes for, 3-115
 trimmings, for searing flavor without presearing, 2-268
 typical, fat content of, 5-XLIII
 vacuum packing of, 2-212
 whole, reconstructing with Activa, 3-256
 fish eyes, in thickening, 4-20, 27
 fish flu, 1-124
 fish roe. *See also* bottarga; caviar
 cold-smoking, parametric recipe for, 3-210
 Fossilized Salsify Branch, 3-399
 Steamed Cod with Cod Roe Velouté, 4-32
 fish sauce, Asian, 3-195

- fish skin
 cooking, 3-129–132
 crispy cooking of, 3-130
 how to, 3-130
 slime as key to, 3-129
 sous vide, 3-131
 pillows and, 3-131
 Salmon Skin Soufflé, 5-161, 163
- Fish Spice Mix, 5-151, 154
- fish stock, parametric recipe for, 2-296–297
- Fizz-Giz system, 3-198, 207
- fizziness. *See also* carbonation
 science of taste of, 2-465
 unwanted associations with, 2-464
- Fizzy Grape Fluid Gel, 4-183
- flagella, of bacteria, 1-130
- Flame Firebox, Inverted, invention of, 3-208
- Flaming Sorbet, memory and nostalgia in, 1-51
- flan, savory
 parametric recipe for, 4-92
 Smoked Egg Crème Caramel, 4-101
- flash boiling, 1-317
- flash points, of frying oils, 2-126
- flash-freezing, 1-306–307
- flatfish, filleting, 3-57
- flatiron steak, seam cutting of, 3-47
- flavor-infused liquids
 example recipe for, 2-313
 parametric recipe for, 2-310
- flavors
 alcohol and, 2-317
 artificial, food quality and, 1-250, 252
 best tasting, science of, 2-299
 bitter, 5-226
 changes in frozen foods, chemistry of, 2-261
 coffee brewing and, 4-364, 366–370
 concentrating, 2-379–397
 of confit, 2-128, 129
 cooking meat and seafood and, 3-84, 87–91
 of espresso, 4-384
 essences of. *See* essences, aromatic
 extracting. *See* essences, aromatic;
 extracting flavors
 fat molecules and, 3-18
 freeze filtration and, 2-369
 freezing and, 1-304, 3-374
 of gazpacho, 5-278
 infusing with sous vide, 2-251
 infusion into fats
 example recipes for, 2-329–331
 parametric recipe for, 2-328–329
 of Jell-O shot, 4-70
 of juice
 how to keep fresh taste of, 2-339
 preserving fresh taste of, 2-338
 of leftover meats, chemistry of, 3-91
 Maillard reaction and, 2-198, 3-89–91
 marinades and, 3-190
 nitrites in bacon and, 3-165
 off, microbes and, 1-135
 pH of, measuring, 2-316
 plant food cooking and, 3-273, 278
 release of
 gel selection and, 4-73
 modern thickeners and, 4-5
 thickener selection and, 4-10–11, 15, 17
- flavors (*continued*)
 reusing deep-frying oil and, 2-123, 124
 roasting coffee for, 4-358, 360–361
 of roux, cooked, 4-22
 salinity of, measuring, 2-313
 of saturated vs. unsaturated oils, 2-126
 savory, for French toast, 4-98
 seasoning with salt and other enhancers of, 2-312
 size of ingredients and, 2-290–291
 of smoke
 capturing, 2-138, 3-211
 chemistry of, 2-12
 smoke rings and, 2-145
 sous vide and, 2-251
 taste testing and. *See* taste testing
 thickener selection and, 4-14
 water bath hotter than target temperature and, 2-245
 wine color and, 4-334–335, 338
- Flay, Bobby, 1-30
- flipping food
 for sautéing, 2-46–47
 for speed and evenness in cooking, 2-38–39
- flocculation, as emulsion failure, 4-210, 212
- Flojel 60, thickening with, parametric recipe for, 4-30
- flour
 converting grams to volumes for, 5-XXXVI
 gluten as bread flour-binder and, 3-376
 instant, thickening with, 4-22, 30
 milling of, 3-376
 organic food movement perception of, 1-253
 rice, 3-376
 rice flour pasta and, parametric recipe for, 3-381
 sauces thickened by, flavor release and, 4-11
 for set foams, parametric recipe for, 4-288–289
 soft wheat, 5-13, 77
 volumetric equivalents for amounts of, 5-XLIV
 Wondra, thickening with, 4-22, 30
 parametric recipe for, 4-30
- Flourless Gnocchi, 4-119
- flowers
 Blossom Salad, 5-171, 172
 Crystallized Rose Petals, 3-368
 dehydrating, parametric recipe for, 3-366
 Foie Gras Torchon with Beet and Hibiscus Glaze, 4-158–159
- fluid gels, 4-176–184
 best bets for, 4-177
 characteristics of, 4-176
 coarse, 4-179
 cold foams as, 4-244–245
 concentrated premade stock gels and, 4-179
 egg gels turned into, 4-74
 egg-based, 1-66
 example recipes for, 4-180–183
 flow of, 4-70
 foam forming with, 4-255
 LA gellan gum concentrations for, 4-V
- fluid gels (*continued*)
 parametric recipe for, 4-177–179
 quick-setting, 4-179
 as shear-thinning liquids, 4-16
 stock, premade, concentrated, 4-179
 as thickeners, 2-346, 4-19
- fluidized bed freezing, 1-307. *See also* blast freezers
- fluke (fish)
 Fluke Ceviche, 3-203
 Fluke Cured in Kombu, 3-181
- flukes (worms), 1-123–124
 disease caused by, 1-120
 liver, 1-123–124
 salmon-poisoning fluke, 1-124
- foaming agents
 in beer, 4-250, 254
 categories of, 4-244
 foam stabilizers and, 4-257
 gelatin as, 4-244–245
 Modernist, 4-255
 traditional, 4-251
- foam-whipping siphon. *See* whipping siphons
- foams, 4-240–315. *See also* foaming agents
 airs as, best bets for, 4-264
 antifoaming agents and. *See* antifoaming agents
 batters as, 3-316
 bubbles as, best bets for, 4-264
 Cauliflower Foam, 5-281, 283
 emulsions vs., science of, 4-249
 equipment for, 4-258–261
 example recipes for, 4-266
 faces and aspects of, 4-262–263
 foaming agents and. *See* foaming agents
 on food surface, sublimation and, 2-444
 forming, 4-252–315
 Fried Egg Foam, 5-211, 212
 froths as, best bets for, 4-264
 geometry of, 4-246
 Guinness beer and, 4-250–251
 Horchata Foam, 5-239, 244
 inhibitors of, 4-244, 247, 257
 light, 4-270–277
 best bets for, 4-270
 example recipes for, 4-272–277
 parametric recipe for, 4-270
 mechanism of action of, 4-244–251
 milk, for espresso, 4-391–395
 Milk Foam, 5-31, 33
 Modernist, 4-255
 Parsley Foam, 5-229, 231
 puffed snacks as, 4-302–309
 rheologic descriptions of, 4-VIII
 Saffron Honey Foam, 5-94
 savory, Adria's use of, 1-36, 4-254
 Scrambled Egg Foam, 5-215, 216
 set. *See* set foams
 spreading use of, 1-73
 stabilizers for
 categories of, 4-244
 Modernist, 4-255
 for traditional foams, 4-247
 types of, 4-257
 thick. *See* thick foams
 for thickening, 4-7, 19
 thickening and longevity of, 4-5
 Tomato Vinegar Foam, 5-60, 65
 traditional, 4-247
- foams (*continued*)
 vacuum inflation for forming, 4-252, 254, 310–315
 vacuum-drying and, 2-433
 fog, steam compared to, 1-319, 2-71
- foie gras
 Abalone and Foie Gras Shabu-Shabu with Yuba and Enoki, 5-197, 203
 Aerated Foie Gras, 4-311
 in ancient Egypt, 1-13, 3-136
 cold-smoking, parametric recipe for, 3-210
 cooking directly from frozen, 1-313
 cooking sous vide, 3-140
 parametric recipe for, 3-146
 Croustis, 3-340
 Foie Gras à la Vapeur plated-dish recipe, 5-109–111
 Foie Gras and Button Mushroom Tart, 3-148
 Foie Gras and Hazelnut Ganache, 5-125, 128
 Foie Gras Cherries, 4-153, 5-267, 268, 269
 Foie Gras Parfait, 5-267, 268, 269
 Foie Gras Parfait Spheres, 4-152
 Foie Gras Soup with Bomba Rice and Sea Lettuce, 3-149
 Foie Gras Torchon, 3-176
 Foie Gras Torchon with Beet and Hibiscus Glaze, 4-158–159
 hepatic steatosis and, pathology of, 3-139
 history of, 3-138
 Knot Foie, 4-144
 liquid nitrogen for freezing, 1-310–311
 production of, 3-138, 140
 Shaved Foie Gras, 3-177
 Sous Vide Foie Gras, 5-109, 110
 Spot Prawns with Foie Gras Nage, 4-233
 Venison Loin Rossini, 3-98
- Fonalleras, Josep Maria, 1-62
- fond, 2-343. *See also* stocks
- food. *See also specific foods and types of foods*
 physics of, 1-292–335. *See also* water
 food allergies, 1-238–239
 Food and Drug Administration (FDA). *See* FDA Food Code; U.S. Food and Drug Administration
 food and health debates, 1-208–259
 on additives, 1-252–254
 on Atkins diet, 1-242
 on chemical processing of food, 1-250–252, 256
 on cleansing toxins from the body, 1-248
 dietary systems and, 1-214–249
 dietary fiber, 1-214–217
 medical, 1-222–239
 nonmedical, 1-240–249
 testing disease risk and, 1-218–222
 on fat
 beneficial forms of, 1-231–232, 234
 in butter vs. margarine, 1-230–231
 chemistry of, 1-233
 cholesterol and, 1-222, 224–227
 heart disease and, 1-229–230
 on French cuisine, 1-228
 on grilled meat and fish, 1-221
 informed decisions in, 1-258–259

- food and health debates (*continued*)
 on Modernist ingredients, 1-250–259
 natural ingredients vs., 1-254–255
 on MSG, 1-213
 on natural ingredients, 1-257
 Modernist ingredients vs., 1-254–255
 on natural toxins, 1-249
 on organic food, 1-245–247
 on raw food, 1-247–249
 on salt, 1-234, 236–238
 scientific analysis of, 1-210–212
 on Spectrum diet, 1-242
 on vegetarianism, 1-244
 on vitamin supplements, 1-235
 on weight loss diets, 1-240–241
 on Weight Watchers, 1-241
 on Zone diet, 1-242
- food hygiene. *See also* food safety
 sous vide and, 2-199, 201
- food intolerances, 1-239
- food labels, 1-214, 239
- food mills, 2-400, 401. *See also* milling
 ball, for dry-grinding, 2-401
 colloid. *See* colloid mills
 double-disc, 2-404
 pin-and-disc, 2-404
 roller, for dry-grinding, 2-404
 single-disc, for dry-grinding, 2-404
- food poisoning, 1-110, 138
 bacteria causing, 1-133
- food preservation, 3-344–373. *See also*
 additives; preservatives; *specific preservation methods*
 anaerobic bacteria and, 1-136, 138
 best bets for, 3-348
 boiling-water canning for, 2-82–83
 chemicals for, 1-144–145
 of eggs, best bets for, 4-82
 food science and, 1-48
 by hunter-gatherers, 1-6
 of plant foods, 3-344–373
 refrigeration, freezing, and canning
 for, 2-75
- food presses, for juicing, 2-332, 334
- food processors
 breaking down food with, 2-400
 for emulsifying sausage, 3-225, 231,
 233
 invention of, 2-412
 wet-grinding with, 2-412
- food safety, 1-162–207
 chemistry of nitrates, nitrites, and
 nitrosamines and, 3-160
 chicken and, misconceptions about,
 1-180–181
 considerations for, 1-101
 cross-contamination and. *See* cross-
 contamination
 cultural factors in, 1-170–171, 173
 “danger zone” and, 1-175–179
 disclaimers and, rules of, 1-178
 drying with warm air and, 2-432–433
 egg garnishes on tartares and, 3-63
 extracting and infusing flavors and,
 2-251
 FDA Food Code on. *See* FDA Food
 Code
 foodborne pathogens and, 1-115–116
 freeze-drying and, 2-447
 government bureaucracy and
 changes in, 1-173
- food safety (*continued*)
 Hazard Analysis and Critical Control
 Point assessment and, 1-195
 holding temperature and,
 misconceptions about, 1-175–176
 hygiene and. *See* hygiene
 Jaccard tenderizers and, 3-51
 microbial contamination and, 1-105
 misconceptions about, 1-174–181
 Modernist cuisine and, 1-255
 Modernist Cuisine philosophy on, 1-191
 multiple water baths at different
 temperatures and, 2-247–249
 Myhrvold on writing about, 1-83
 natural essences and, 2-324
 natural pesticides and, 1-245
 organic foods and, 1-247
 pasteurization and, 2-250
 pathogenic strains of *E. coli* and, 1-137
 political factors in, 1-170–171, 173
 pork, misconceptions about,
 1-179–180
 public health and rules on, 1-169–170
 rapid chilling and, 2-254
 raw shellfish and, 3-27–28
 rules for
 complex origins of, 1-166–173
 scientific simplification of,
 1-190–195
 sous vide and, 2-201
 trends in, factors influencing, 1-169
 of uncured confit, 2-128
 water baths hotter than target
 temperature and, 2-245
 worrisome signs when curing and,
 3-164
- Food Safety and Inspection Service
 (FSIS)
 on chicken cooking times, 1-181
 on pork cooking times, 1-179
Salmonella reduction standards of,
 1-168
 on thin roasts vs. thick steaks, 1-187
- food science
 development of, 1-42, 44–49
 history of, 1-48
 industrialization of food and
 development of, 1-24
 McGee on, 1-43
- food size. *See also* portions
 batch size and consistent baking and,
 2-111, 112
 combi ovens vs. water bath cooking
 and, 2-167
 conduction and, 1-279
 cook-chill sous vide method and,
 2-256
 deep-frying and, 2-117
 drying with warm air and, 2-432
 flavor extraction and, 2-288, 290–291
 freeze-drying and, 2-446–447
 microwave cooking and, 2-183, 188,
 189
 reducing. *See* particle size reduction
 roasting and, 2-28, 32
 sautéing and, 2-44
 sous vide cooking times and,
 2-276–279
 stir-frying and, 2-54
 in water bath hotter than final
 temperature, 2-246
- food thickness
 convection baking and, 2-110
- food thickness (*continued*)
 sous vide cooking times and,
 2-276–279
- foodborne illnesses, 1-110–119
 common misconceptions about,
 1-117–119
 contamination routes for, 1-116–117
 contamination sources for, 1-113,
 115–116
 cross-contamination and, 1-166
 diagnosis of, 1-114
 infectious dose for, 1-115
 mechanical tenderizers and, 1-176
 noroviruses and, 1-153–154
 tracking, 1-110–111, 113
- foodborne pathogens
 bacterial, 1-134–135
 common misconceptions about,
 1-117–119
 microbes as, 1-106
 research on, food safety rules and,
 1-166
 time to onset of symptoms after
 exposure to, 1-114
 types of, 1-108–109
- forced convection
 from air, heat transfer coefficient of,
 1-283
 boundary layer and, 1-283
 in CVap ovens, 2-159
- forced-convection ovens, 1-282–283
- forced-convection steam ovens, 2-239
- forcemeat, 3-222
 Activa TI for, 3-250
- forceps, surgical, for Modernist kitchen,
 2-286
- foreshots, in distillation, 2-384
- Forgione, Larry, 1-28, 29
- The Forme of Cury* (1390), 1-10
- Fort, Matthew, 1-50
- Fossilized Salsify Branch, 3-399
- Foucault, Léon, 2-191
- Fourier, Jean Baptiste Joseph, 1-278
- Framingham Heart Study, 1-225, 231
- France. *See also* Bordeaux, France
 agar in, history of cooking with, 4-128
 aristocratic food in, 1-8
 cuisine of, heart disease and, 1-228
 early gastronomy of, 1-9
 haute cuisine of, 1-19
 McDonald’s in, 1-23–24
 medieval cuisine in, 1-12
 New International cuisine and,
 1-29–30
 Nouvelle cuisine in, 1-24, 26–27
 plated dishes in, 1-25
 seam cutting in, 3-47
 sous vide cooking in, 1-40, 41
 wine regulation in, 4-331–332
- Francisella tularensis*, 1-138
- frankfurters
 Frankfurter, 3-242
 parametric recipe for, 3-238–239
 seasonings in, 3-226
- free water
 as measure of dryness, 2-428
 rehydration and, 1-321
- Freedom Cooking System, 2-240
- freeze concentration, 2-379, 396, 397
- freeze dryers, 2-444, 448–449
- freeze filtration, with gels, 2-368–371
- Freeze-Dried Beef Gravy Granules,
 2-454
- Freeze-Dried Carrot Foam, 4-300
- Freeze-Dried Egg Yolk, 5-247, 250
- Freeze-Dried Onion Powder, 3-373,
 5-261, 263
- Freeze-Dried Pork, 5-247, 251
- freeze-drying, 2-444–455, 3-365
 best bets for, 2-451
 characteristics of, 2-444–447
 common problems with, 2-452
 critical temperatures for, science of,
 2-453
 equipment for, 2-285
 example recipes for, 2-454–455,
 5-185, 247
 of fruits, parametric recipe for, 3-372
 method for, 2-448–449, 450
 parametric recipe for, 2-450–452
 physics of, 1-329
 of plant foods, 3-344, 365
 prefreezing temperatures for, 2-451
 sublimation and, 1-328, 2-444, 3-365
 of vegetables
 example recipes for, 3-373, 5-261
 parametric recipe for, 3-372
- freezer burn, 1-308, 326
- freezer taste, 1-306
- freeze-thaw stability, thickener
 selection and, 4-15
- freezers
 extracellular fluid as liquid in,
 1-305–306
 pros and cons of, 2-259
 sublimation in, 1-326
 temperature control in, 1-205–207
 types of, 1-306–307
- freezing. *See also* frozen foods; *entries*
beginning with cryo-
 anisakid infections and, 1-123
 below glass-transition temperature,
 1-306
 bread freshness and, 1-320
 carbonated liquids and, 2-464
 cryogenic. *See* cryogenic freezing
 of fish, 1-194, 3-37
 flash, Birdseye and, 1-306–307
 food preservation and, 2-252
 freeze-drying and. *See* freeze-drying
 freezers and. *See* freezers
 of gel spheres, how to, 4-135
 juice extraction with, 2-239, 335, 337
 methods for, 1-306–311
 physics of, 1-299
 of plant foods, 3-344
 to modify texture, 3-374
 pressure-shift, physics of, 1-309
 of raw foods
 extracellular fluid and, 1-305–306
 FDA on time and temperature for,
 1-186
 in salty brine, 2-260
 sous vide cooking and, 2-256–258
 strategies for, 2-259
 thawing and. *See* thawing
 thickening sauces, jus, or glazes by,
 2-346
Trichinella infections and, 1-117–118,
 121–122
 of water, 1-304–311
 hydrogen bonds and, 1-298
 physics of, 1-299
- freezing point
 depression of
 dissolved materials and, 1-304–305

- freezing point (*continued*)
 freeze concentration and, 2-396
 pacotizing and, 2-406
 in phase diagrams, 1-302–303
The French Cook (La Varenne, 1651), 1-8, 9
 French cuisine. *See* France
 French Culinary Institute. *See* Arnold, David; Norén, Nils
 French fries
 frozen, program cooking in combi oven of, 2-169
 ultimate, how to make, 3-322
 The French Laundry, 1-38, 56, 68. *See also* Keller, Thomas
 French onion soup, pressure-cooking, 3-298
 French press coffee brewer, 4-368
 French roast stage, of coffee, 4-362
 French Scrambled Eggs, 4-93
 French toast, Chorizo French Toast, 4-98–99
 frequencies, of microwaves, 2-182
 Fresh Bean Salad, 5-85, 87
 Fresh Cheese Curds, 4-106–107
 fricassees
 Carrot and Dill Fricassee, 5-161, 164
 Fricassee of Fava Beans and Lychees, 5-171, 173
 Sweet Pea and Young Ginger Fricassee, 5-273, 275
 friction
 emulsification and, 4-13, 206
 heat generated by, 1-274, 2-398, 4-206
 meat grinding or chopping and, 3-230–231
 Fried Chicken Sausage, 3-249
 Fried Egg Foam, 5-211, 212
 Fried Green Tomatoes, 5-67, 74
 Fried Pickles, 5-67, 75
 Frieden, Thomas R., 1-237
 frigi-canning, 2-84–85
 frittatas, parametric recipe for, 4-92
 froths
 best bets for, 4-264
 parametric recipe for, 4-264
 Frozen Cheddar-Cheese Powder, 2-411
 Frozen Chorizo Powder, 5-193, 194
 Frozen Crème-Frâiche and Pine-Nut Cream, 2-411
 frozen foods. *See also* freezing
 in conventional freezers, 1-305–306
 flavor changes in, chemistry of, 2-261
 food quality and, 2-256–258
 organ meat freshness and, 3-136
 seafood as, 1-182, 3-37
 thawing vs. cooking directly from freezer, 1-313, 2-258, 262, 263
 Frozen Pomelo Cells, 5-189, 191
 frozen set foams, 4-245, 247
 Frozen White “Truffle,” 3-400–401
 fruit chips
 example recipes for, 3-328–330
 fried, best bets for, 3-328
 parametric recipe for, 3-328–329
 fruit gels, hot
 best bets for, 4-165
 parametric recipe for, 4-164–165
 fruit meringue, cryofreezing of, 2-458
 fruits. *See also* citrus fruits; fruit chips; acidic juice for marinades from, 3-195
 fruits (*continued*)
 as acidifiers, 2-31, 314, 315
 blanching, 2-269
 carbonating, 1-69, 2-464, 469, 472
 classification of, 3-262
 colorectal cancer risk and, 1-214–215
 compressed, example recipes for, 3-392–394, 5-285
 cooked, seasonal mélanges of, 3-294
 cooking sous vide
 parametric recipe for, 3-288, 290–291
 for purees, best bets for, 3-290
 in sugar syrup, best bets for, 3-291
 until tender, best bets for, 3-288
 cutting tools for frying, 3-326–327
 dehydrating
 best bets for, 3-366
 example recipes for, 3-369–370
 parametric recipe for, 3-366–367
 disassembling with liquid nitrogen of, 2-458, 462
 FDA standards and, 1-189
 freeze-drying
 best bets for, 3-372
 parametric recipe for, 2-451, 3-372
 freshness control of, sous vide and, 2-201
 gelling agents from, 4-126
 heat-shocking, 3-358–359
 hydrocolloids and, as thickeners, 4-19
 impregnated, example recipes for, 3-392–394, 5-285
 with peels, carbonating, 2-464
 plated-dish recipes for, 5-259–260, 277–279, 285–287
 preserving, best bets for, 3-348
 purees of
 example recipes for, 2-427
 parametric recipe for, 2-424–425
 raw, seasonal mélanges of, 3-294
 ripening, 3-283–284
 with sugar, brandied, fermentation and, 3-346
 volumetric equivalents for amounts of, 5-XLIV
 water content of, 5-XL–XLI
 frying, 3-314–343
 batter-frying
 example recipes for, 3-334–337
 parametric recipe for, 3-332–333
 with breading, 3-338–343
 deep-frying and. *See* deep-frying
 of fruits
 chips and, 3-328–329
 cutting tools for, 3-326–327
 naked, 3-317, 321
 best bets for, 3-320
 chemistry of, 3-320
 coated frying vs., 3-316, 318–319
 oils for, chemistry of, 2-126
 panfrying and. *See* panfrying
 shallow. *See* shallow frying
 stir-frying and. *See* stir-frying
 vacuum, 2-128
 of vegetables
 chips and, 3-330–331
 cutting tools for, 3-326–327
 example recipes for, 3-321, 323–325, 5-11
 potatoes as, 3-322–325
 frying pan, cutaway illustration of, 3-72–73
 FSIS. *See* U.S. Food Safety and Inspection Service
 full city roast stage, of coffee, 4-362
 functional magnetic resonance imaging (fMRI), during wine tastings, 4-340
 fusel alcohols (fusel “oils”), 2-384
 fusion cooking, development of, 1-29
 Gagnaire, Pierre
 Adrià and, 1-34
 Erice Conferences and, 1-45, 46
 Green Olive Meringue recipe, 4-298
 hot spring eggs and, 4-75
 Modernist cuisine and, 1-64
 molecular gastronomy of This and, 1-48
 New International cuisine and, 1-30
 Nouvelle cuisine and individuality of, 1-27, 39–40
 Gajdusek, D. Carleton, 1-159
 Galileo, 1-107
 Gamay Noir, Gouais Blanc and, 4-327
 game broth, parametric recipe for, 2-304–305
 gamma-ray irradiation, to kill bacteria, 1-149
 ganache, Foie Gras and Hazelnut Ganache, 5-125, 128
 Gand, Gale, 1-69
 garagistes, 4-332
 García, Dani
 liquid nitrogen and, 1-64, 65
 Modernist cuisine and, 1-57
 García del Moral, Raimundo
 on hepatic steatosis and foie gras, 3-139
 liquid nitrogen and, 1-64
 gargling liquid nitrogen, safety and, 2-466
 Le Gargouillou, 1-40, 3-294–295
 garlic
 Apicius on, 1-12
 blanching, 5-26
 Brown Butter-Poached Green Garlic, 5-229, 230
 cooking sous vide, parametric recipe for, 3-290, 292
 Dehydrated Garlic Chips, 5-43, 46
 Garlic Confit, 3-354, 5-25, 60, 81
 Garlic Nougatine, 5-25, 29
 Green Garlic and Pork Sausage, 5-85, 86
 Pickled Garlic, 5-25, 26
 preserving, parametric recipe for, 3-348
 Soft-Boiled Egg and Garlic Emulsion, 4-227
 Spring Garlic Consommé, 5-85, 86
 Toasted Garlic Chips, 5-5, 9
 Toulousain Garlic Sausage, 5-81, 82
 wild garlic blossom and, 5-26
 garum, 1-11, 3-195
 Pomegranate and Garum Jus, 5-121, 122
 gas burners, efficiency of, 1-274
 gas griddles, 2-40
 gas grills
 charcoal grills vs., 2-10–11
 controlling heat in, 2-14
 gas-in-water (G/W) emulsions, 4-243
 gas-in-oil (G/O) emulsions, 4-243
 gases. *See also* carbonation; evaporation; steam
 heat convection in, 1-282
 internal energy of, 1-264
 physics of, 1-301

- gases (*continued*)
 phase changes and thermal energy from, 1-290
 as solvents, 1-330, 332–333
 vapor vs., 1-300
- gastroenteritis, 1-114, 119
- Gastronorm hotel pans, as vacuum containers, 2-226–227
- Gault, Henri
 Nouvelle cuisine and, 1-24, 26–27
 sous vide cooking and, 1-41
- Gauthier, Alexandre, Modernist cuisine and, 1-64
- Gayot, André, 1-24
- gazpacho
 flavor of, 5-278
 Strawberry Gazpacho, 5-277, 278
- GDL (glucono delta-lactone)
 gel formation with, 4-102
 product guide for, 4-II–III
- gel. *See* gels
- gelatin. *See also* gelatinization
 ballistic, 4-68
 Bloom strength and, 4-V
 characteristics of, 4-67–68
 as foaming agent, 4-244–245, 251
 freeze-drying and, 2-447
 fruit juice and, 3-195
 gelling agents from, 4-69
 gels and
 with alcohol, 4-IV
 parametric recipe for, 4-116–117
 as hydrocolloid for thickening, 4-38
 hydrogen bonds in water and, 1-296
 ice filtration and
 for clarifying, 2-368–369
 for liquids and consommés, 2-352
 technique for, 2-370–371
 interactions with other thickeners, 4-44–45
 160 Bloom. *See* 160 Bloom gelatin
 organic food movement perception of, 1-253
 product guide for, 4-II–III
 production process for, 1-256
 properties and uses of, 4-42–43
 in skin, baking chicken upright and, 2-109
 as thermo-reversible gel, 4-70
 as thickener, 4-5
 unflavored, volumetric equivalents for amounts of, 5-XXIV
 whipped cream and, 4-248
- gelatinization
 of collagen, 3-78–79
 common problems with, 4-27
 cooking floury potatoes and, 3-280
 holding at a temperature and, 2-247
 of starches, 4-22
 temperature requirements for, 4-68
- gelato, pistachio cream for, 4-214
- gellan
 as emulsion stabilizer, 4-215
 fat incorporation into sausage with, 3-225
 as fluid gel, 4-176
 high-acyl. *See* high-acyl gellan
 low-acyl. *See* low-acyl gellan
 natural sources for, 1-253
- gelling agents
 hydrocolloids as, 4-67, 68, 124–175
 modern, 4-126
 sources of, 4-68
- gels, 4-64–195. *See also* gelling agents
 aerogels, history of, 4-72
 alginate, Adrià's use for, 1-39
 casting
 how to, 4-132
 of thick sheets, how to, 4-134
 cellulose gum. *See* cellulose gums
 chemistry of, 4-71
 cold
 best bets for, 4-140–141
 parametric recipe for, 4-140–141
 concentrated, stock solution of, 4-126
 considerations for, 4-73
 dairy, 4-102–123
 example recipes for, 4-105–111, 114
 derivation of term, 4-67
 egg. *See* egg gels
 familiar, 4-67–69
 firm coating, best bets for, 4-151
 fluid. *See* fluid gels
 formation process for, 4-70–72
 hot. *See* hot gels
 hydrocolloid. *See* hydrocolloid gels
 ion-coagulated, 4-124–127
 how to use, 4-129
 Madeira Gelée, 5-125, 131
 meat. *See* meat gels
 modern, 4-126
 molding
 how to, 4-133
 with suspended solids, how to, 4-133
 noodles and
 how to extrude, 4-138
 how to extrude with peristaltic pump, 4-139
 rheologic descriptions of, 4-VIII
 Salt Gel, 5-5, 9
 seafood, 3-222
 Spiced Walnut Vinegar Gel, 5-109, 111
 spreading use of, 1-73
 tofu, 4-102–123
 example recipes for, 4-112–113, 115
 traditional, 4-69
 vegetable, hot, parametric recipe for, 4-164–165
- generally recognized as safe (GRAS)
 ingredients, 1-254
- Genevac Rocket Evaporator, 2-391–395
 example recipes for, 2-394
- genome, bacterial, sequencing of, 1-130
- genus, 1-112
- geoduck clams
 biology of, 3-27
 cooking sous vide, parametric recipe for, 3-108
 Geoduck with Seawater Foam, 4-266
 Marinated Geoduck, Young Ginger, Shiso, 5-197, 200
- geometric growth, of bacteria, 1-142
- geometry. *See also* food size; food thickness
 of foam, 4-246
 heat conduction in food and, 1-279
- geosmin
 in beets, 5-182
 in freshwater fish, 3-88
- Gerber, Walter, 4-222
- Germany
 early gastronomy of, 1-10
 sausage-making in, 3-223
- ghee, 4-213
- Giardia intestinalis*, 1-127–129
- Giardia lamblia*, 1-128
- giardiasis, 1-128
- Il Giardino d'Italia, 1-21, 31
- ginger
 Crab and Ginger Marble, 5-253, 255
 Ginger Cola, 4-239
 infusion of, parametric recipe for, 2-310
 Sweet Pea and Young Ginger Fricassee, 5-273, 275
 Tuna Ribbons with Ginger Marmalade, 3-202
 XO Sauce, 4-52
- ginger extract, parametric recipe for, 2-326
- Girardet, Frédy
 Black Cod "Frédy Girardet" and, 5-170–173
 Nouvelle cuisine and individuality of, 1-27
 poaching and broiling by, 2-24–25, 96, 97
- GISSI-Prevenzione clinical trial, 1-232
- Gittleman, Ann Louise, 1-248
- gizzard, characteristics and cooking of, 3-141–142
- glasses, edible, 4-6
 dehydrating formula for, 3-367
 Pineapple Glass, 3-370
 Spiced Honey Glass, 5-121, 123
- glass jars
 for canning, 2-77
 heating requirements and duration for, 2-79
 packing food in, 2-78
- glass-ceramic stoves, 1-274
- glass-transition temperature
 freeze-drying and, 1-329, 2-444, 446
 freezing below, 1-306
- Glazed Carrot, 5-185, 186
- Glazed Oxtail, 5-49, 50
- Glazed Pearl Onion, 5-261, 263
- Glazed White Carrot, 5-31, 32
- glazes
 Banyuls Glaze, 5-17, 19
 Bulgogi Glaze, 5-285, 287
 Constructed Red Wine Glaze, 5-219, 221
 Foie Gras Torchon with Beet and Hibiscus Glaze, 4-158–159
 Goulash Glaze, 5-55, 57
 Hamburger Glaze, 5-11, 14
 Squash Glaze, 5-60, 63
 Sweet, Sour, and Savory Glaze, 5-43, 44
 thickening strategies for, 2-346
 vacuum evaporation for reducing, 2-346
- glazing
 as alternative to boiling, 2-70
 covered sautéing of vegetables and, 2-58
- gloves, personal hygiene and, 1-200
- glucono delta-lactone (GDL)
 gel formation with, 4-102
 product guide for, 4-II–III
- glucose powder, for edible films, parametric recipe for, 4-60
- glucose syrup DE 40
 for bubbles and froths, parametric recipe for, 4-264
- glucose syrup DE 40 (*continued*)
 as emulsion stabilizer, 4-215
 for set foams, parametric recipe for, 4-288–289
 thickening with, parametric recipe for, 4-47
- glue
 meat, 3-250–256, 4-70. *See also* Activa
 vegetable, 3-392
- gluten
 as bread flour-binder, 3-376
 intolerance to, 1-239
- glycerin, for edible films, parametric recipe for, 4-60
- glycerol
 centrifuging and, 2-368
 in milk, foam development and, 4-392
- glycine, in scallops, 3-26
- glycogen, in scallops, 3-26
- gnocchi
 Flourless Gnocchi, 4-119
 Idiazábal Gnocchi, 4-123
- G/O (gas-in-oil) emulsions, 4-243
- Goan Curry, 5-90, 91, 95
- goat cheese
 Goat Cheese Dumplings, 4-105
 Herbed Cheese Spread, 4-57
- goat's milk
 carotenoid pigments and, 3-92
 as emulsion, color of, 4-202
 Goat Milk Ricotta, 4-108
- goats, scrapie in, 1-157
- God shot, of espresso
 as absolute perfection, 4-357
 first, pleasure of, 4-375
 pod or capsule systems and, 4-400
- Goin, Suzanne, Achatz's first meal at elBulli and, 1-38
- Goldfarb, Will, 1-67
- Gong Bao Chicken, 3-205
- goose, cooking sous vide, parametric recipe for, 3-99
- gooseberries, as acidifier, 2-314
- Gosset, William Sealy, 4-251
- Gouais Blanc grapes, Chardonnay and, 4-327
- Gouda cheese
 Cheese in a Tube, 4-225
 Mac and Cheese, 3-387
 Pressure-Cooked Vegetable Risotto, 3-308
- Goulash Broth, 5-55, 56
- Goulash Glaze, 5-55, 57
- Goussault, Bruno
 biography of, 1-43
 sous vide cooking and, 1-41
- grafting, grape varieties and, 4-326–327
- Graham, Tim, 1-69
- Grahm, Randall, 4-345
- grains
 converting grams to volumes for, 5-XXXVI
 seasonal mélanges with, 3-294
 water content of, 5-XLI
- Gram, Hans Christian, 1-106
- gram-calorie, 1-272
- Gram-negative bacteria, 1-106
- Gram-positive bacteria, 1-106
- la grande cuisine*. *See* Escoffier, Auguste
- Grandin, Temple, biography of, 3-36
- granita, Passion Fruit Granita, 5-175, 177

- grapefruit
 as acidifier, 2-314
 cooking sous vide, parametric recipe for, 3-291
 Eggless Citrus Curd, 4-234
 Enzyme-Treated Pink Grapefruit, 3-357
 Grapefruit and Black Pepper, 4-276
 Grapefruit-Cured Salmon, 3-180
 Pink Grapefruit Confit, 5-225, 226
- grapefruit diet, 1-240–241
- grapes. *See also* verjus
 carbonated, 2-464
 Cantu on, 2-469
 compressing, parametric recipe for, 3-390
 cooking sous vide, parametric recipe for, 3-288, 291
 Fizzy Grape Fluid Gel, 4-183
 freeze-drying, parametric recipe for, 3-372
 heat-treating, parametric recipe for, 3-359
 impregnating, parametric recipe for, 3-390
 preserving, parametric recipe for, 3-348
 in Shigoku Oyster with Fizzy Grapes, Fresh Wasabi, and Miso Powder, 5-197, 200
 White Grape Syrup, 4-52
 for wine, 4-319–320
 varieties of, 4-326–328
- grapeseed oil, chemistry of, 2-126
- GRAS (generally recognized as safe) ingredients, 1-254
- Gras, Laurent, 1-69
- graters, Microplane
 Adria's use of, 1-36, 3-388
 cutting vegetables for frying with, 3-327
- gratin, Onion Gratin, 5-261, 265
- grating, cryogenic freezing for, 2-461
- gravy
 Red-Eye Gravy, 5-101, 102
 Thanksgiving Turkey Gravy, 4-33
- Gray, Theodore, liquid nitrogen ice cream and, 1-63–64
- graybodies, absorption and emission by, 1-286
- greasiness, in deep-fried foods, avoiding, 2-125, 127
- Great Atlantic & Pacific Tea Company, 1-21
- Greece
 ancient, sausage-making in, 3-220
 early gastronomy in, 1-12–13
- Green Asparagus and Morels with Asparagus Jus, 2-341
- green beans
 Fresh Bean Salad, 5-85, 87
 preserving, parametric recipe for, 3-348
- green cabbage, in Sauerkraut, 3-351, 5-35
- Green Garlic and Pork Sausage, 5-85, 86
- Green Mango and Cashew Salad, 5-167, 169
- Green Olive Meringue, 4-298
- green olives
 Green Olive Meringue, 4-298
 Liquid Pimento Olive, 4-193
 Olive Marmalade, 4-99
- Green Papaya Pickle, 5-97
- green peas
 Cantonese Fried Rice, 2-176–177
 Centrifuged Pea Juice, 2-367
 Cinnamon-Scented Pea Juice, 5-273, 275
 cooking sous vide, parametric recipe for, 3-292
 freezing to preserve flavor of, 3-374
 Fresh Bean Salad, 5-85, 87
 Green Pea Yuba, 4-115
 Pacojet Pea Soup, 2-410
 pea consommé, parametric recipe for, 2-374–375
 puree of, parametric recipe for, 2-425
 Sweet Pea and Young Ginger Fricassee, 5-273, 275
 Sweet Pea Clusters, 4-173
 Sweet Pea Wafer, 3-371
- Green Star macerating juicers, 2-332
- green tea
 Cryopoached Green Tea Sour, 4-291
 Green Tea Cake, 4-292
 infusion of, parametric recipe for, 2-310
- green tomatoes, Fried Green Tomatoes, 5-67, 74
- Greene, Gael, 1-61
- Greenland shark, chemistry of, 3-43
- Gremolata Crisp, 5-60, 64
- grey mullet bottarga, in Sea Urchin Bottarga, 5-226
- griddles
 characteristics of, 2-40
 for Modernist kitchen, 2-287
 panfrying using, 2-37
 searing using, 2-40–41
 for sous vide cooking, 2-271
 shiny, physics of, 1-284
- grilling, 2-6–17
 charcoal vs. briquettes for, 2-12
 charcoal vs. gas for, 2-10–11
 charcoal vs. wood for, 2-7
 chemistry of flavor and, 2-12
 cutaway illustration of, 2-8–9
 draft and, 2-7
 historical uses of, 1-16
 indirect, 2-13
 sous vide cooking and, 2-270
- grills. *See also* grilling
 charcoal
 controlling heat in, 2-14
 gas grills vs., 2-10–11
 gas
 charcoal grills vs., 2-10–11
 controlling heat in, 2-14
 manufacturers of, "BTU" as used by, 1-272
 as ovens, 2-13
 radiant heat from, 1-277, 284
 sweet spot of, 2-14–17
- Grimes, William, 1-63
- grinders. *See* coffee grinders; espresso grinders; meat grinders
- grinding. *See also* milling; coffee beans
 colloidal suspensions from, 4-12
 dry, equipment for, 2-401–402, 404, 407
 example recipes for, 2-403–405, 5-35, 125
 of fat
 how to, 3-228
- grinding (*continued*)
 to incorporate into sausage, 3-224–225
 mathematics of power for, 2-401
 of meat
 collagen mesh and, 3-76
 how to, 3-228
 for sausage, 3-220
 strategies for, 2-400
 tools for, 3-230–233
 wet. *See* wet-grinding
- grooming espresso portafilters
 dosing and, 4-380
 how to, 4-381
 methods for, 4-383
- grouse
 cooking sous vide, parametric recipe for, 3-99
 as substitute for pigeon, 5-132
- Growth Predictor, simulating bacterial growth, 1-147
- Gruyère cheese
 Aerated Gruyère, 4-312
 Cheesy "Whiz," 4-225
 Gruyère Custard, 5-261, 264
 Gruyère Soufflé, 4-301
 Gruyère Spheres, 4-190
 Ham and Cheese Omelet, 4-95
 Whipped Cheese, 4-272
- guar gum
 controlling syneresis with, 4-17
 as emulsion stabilizer, 4-215
 fat incorporation into sausage with, 3-225
 interactions with other thickeners, 4-44–45
 for light foams, parametric recipe for, 4-270
 product guide for, 4-II–III
 production process for, 1-257
 properties and uses of, 4-42–43
 thickening with, parametric recipe for, 4-46, 47
- Guérard, Michel, 1-24, 26
 pot-au-feu of, 5-49
- Le Guide Culinaire* (Escoffier, 1903), 1-9, 19–20
- Le Guide Michelin*, star ratings of, 1-24
- guinea hen
 cooking sous vide, parametric recipe for, 3-99, 108
 Guinea Hen Tagine plated-dish recipe, 5-135–139
 Sous Vide Guinea Hen, 5-135, 137
- Guinness beer
 draft-beer-style head on, 4-250–251, 254, 256
 Guinness "Pâte de Fruit," 4-145
- gum arabic
 interactions with other thickeners, 4-44–45
 natural source for, 1-253, 257
 properties and uses of, 4-42–43
 as surfactant emulsifier, 4-216–217
- gum tragacanth
 interactions with other thickeners, 4-44–45
 product guide for, 4-II–III
 properties and uses of, 4-42–43
 thickening with, parametric recipe for, 4-46, 47
- gums. *See also* specific types of gums
 hydrocolloid
 flavor release by, 4-11
 grades, brand names, and proprietary blends of, 1-95
 natural sources for, 1-253
 organic label for, 1-245
 scaling using baker's percentages and, 1-96–97
 kori bustard's consumption of, 1-253
 as thickeners, 4-15
 thickening sauces, jus, or glazes with, 2-346
- Gundel, Károly, 5-55
- Guns, Germs, and Steel* (Diamond), 3-268
- G/W (gas-in-water) emulsions, 4-243

- HA gellan. *See* high-acyl gellan
- HACCP (Hazard Analysis and Critical Control Point) assessment, basics of, 1-195
- Haerberlin, Paul, 1-49
- hake, cooking sous vide, parametric recipe for, 3-102
- Haldane, J. B. S., 2-288
- halibut
 - cooking sous vide, parametric recipe for, 3-102
 - Halibut Brandade, 5-151, 152
 - Halibut Cheek Gel Base, 5-143, 144
 - Halibut Cheeks, 5-143, 144
 - Halibut in Verbena Bubble, 4-156–157
 - Lutefisk, 3-200
 - Salted Halibut, 3-187, 5-151
- ham. *See also* jamón Ibérico; prosciutto
- Blackstrap Molasses Country Ham, 3-183
- cold-smoking, parametric recipe for, 3-210
- cooking sous vide, parametric recipe for, 3-109
- Cured Ham Broth, 5-81, 84
- Ham Broth, 2-306
- Ham Consommé with Melon Beads, 4-48
- Spanish raw-cured, U.S. importation rules on, 1-173
- XO Sauce, 4-52
- Ham and Cheese Omelet, 4-95
- ham and cheese sausage, parametric recipe for, 3-238–239
- ham broth
 - Ham Broth, 2-306
 - parametric recipe for, 2-304–305
- Ham Consommé with Melon Beads, 4-48
- hamachi
 - cooking sous vide, parametric recipe for, 3-102
 - Hamachi Maltaise plated-dish recipe, 5-147–149
 - Seared Hamachi, 5-147, 149
- Hamburger Buns, 5-11, 12
- Hamburger Glaze, 5-11, 14
- hamburgers
 - best bets for, 3-234
 - as coarse “sausage,” 3-220, 222
 - meat grinders for, 3-233
 - parametric recipe for, 3-234–235
 - perfect, how to cook sous vide, 3-86
- Hancock, Jerry, liquid nitrogen ice cream and, 1-63
- hand washing
 - proper methods for, 1-196–199
 - UV lotion or powder and, 1-201
- handheld blenders
 - dispersing thickeners with, 4-24
 - emulsifying with, 4-208, 209
 - foam forming with, 4-252, 258, 259
 - hydration of ion-coagulated gels with, 4-124
 - hydrocolloid dispersion with, 4-38
 - for Modernist kitchen, 2-286
 - ultrasonic homogenizers as, 2-415
 - wet-grinding with, 2-413
- handheld smokers, 2-146
- handheld whipping wands. *See also* whisks
 - foam forming with, 4-258
 - to froth milk, 4-391
- Hanger Steak Tartare, 3-65
- Hanig, Dieter, 4-341
- Hanner, Heinz, 1-70
- hard apple cider
 - freeze-concentrating to make applejack, 2-396
 - Poached Apple with Pecorino Foam, 4-276
- hard water
 - dissolved minerals and, 1-335
 - espresso-making and, 4-384
 - hydration of ion-coagulated gels with, 4-124
 - plant food cooking and, 3-278
- hard-boiled eggs, parametric recipe for cooking, 4-78
- hardwood charcoal, briquettes vs., 2-12
- Harvard School of Public Health, 1-230
- Harvell, Michael Lee, 3-207
- Hawaiian Poke plated-dish recipe, 5-175–177
- Hay-Smoked Chicken Crown, 5-113, 114–115
- Hazard Analysis and Critical Control Point (HACCP) assessment, 1-195
- hazard ratio, nutritional studies and, 1-219
- haze (weather phenomenon), 1-325
- hazelnut oil
 - Broccoli and Hazelnut-Oil Puree, 2-426
 - Hazelnut Oil Extract, 2-321
- hazelnut oil extract
 - Hazelnut Oil Extract, 2-321
 - parametric recipe for, 2-326
- hazelnuts
 - Centrifuged Roasted-Hazelnut Oil, 2-367
 - Dried Cherry and Hazelnut Nougatine, 5-267, 270
 - Foie Gras and Hazelnut Ganache, 5-125, 128
 - Hazelnut “Cream,” 4-236
 - Romesco Sauce, 2-419
 - Sauccisson Sec, 3-247
- HCAs (heterocyclic amines), 1-220
- HDL (high-density lipoproteins), 1-226
- heads, in distillation, 2-384
- health. *See* food and health debates; foodborne illnesses; foodborne pathogens
- heart, characteristics and cooking of, 3-142
- heart disease
 - cholesterol and, 1-224–227
 - dietary fiber and risk of, 1-216
 - fat and, 1-229–230
 - French cuisine and, 1-228
 - weight loss diets and, 1-242
- heart pattern, for caffè lattes, 4-395
- hearts of palm, cooking sous vide, parametric recipe for, 3-289
- heat, 1-260–291. *See also* energy; temperature
 - bacterial toxins and, 1-135
 - conduction of. *See* conduction
 - convection of. *See* convection *entries*
 - defining, 1-264
 - efficiency and, 1-274
 - of kitchen devices producing, 1-275
 - energy and, 1-263
 - excessive, pressure cookers and, 2-291
 - friction and. *See* friction
 - fruit ripening and, 3-283–284
 - of fusion, 1-296
 - latent, of vaporization. *See* latent heat of vaporization
 - lost, cutaway illustration of sources for, 1-276
 - in motion, 1-277–290
 - oil changes due to, 2-115
 - oven control of, 2-153
 - from pan bottom to handle, 1-280–281
 - physics of woks glowing hot, 1-287
 - radiant. *See* radiation
 - shellfish flavors and, 3-27
 - specific, definition of, 1-266–267
 - spherification and, 4-184
 - steam distillation and, 2-320
 - of sublimation, 1-326
 - temperature and, 1-264–271
 - testing oven controls for, 2-156–157
 - transfer of
 - boiling and, 2-63
 - cold-shocking and, 2-254, 256
 - computer simulation models of, 1-282
 - with conduction, 1-277–281. *See also* conduction
 - with convection, 1-279, 281–283. *See also* convection
 - direction of, 1-265–266
 - Fick’s law of diffusion and, 2-290
 - Myhrvold on writing about, 1-84
 - with radiation, 1-284–286
 - types of, 1-277
 - in water bath at core temperature, 2-245
 - in water bath hotter than target temperature, 2-245, 247
 - of vaporization, 1-296. *See also* latent heat of evaporation
 - whipped cream and, 4-244, 248- heat capacity
 - of cookware, 1-278
 - of water, 1-298
- heat content, measuring, 1-300–301
- heat equation
 - calculating cooking times using, 1-279
 - history of Fourier and, 1-278
- heat flux, from grills, 2-10
- heat lability, of bacterial toxins, 1-135
- heat transfer coefficient, 1-283
- heat-gun browning, 2-275. *See also* blow torching and blowtorches
- Heather-Smoked Sturgeon, 5-233, 235
- Heather-Smoked Sturgeon Rillettes, 5-233, 235
- heat-set Activa bonding, 3-252
- heat-shocking, of plant foods, 3-344, 358–359
- heat-treated fruit, parametric recipe for, 3-359
- hemoglobin, role of, 3-12, 14
- Henderson, Fergus, 1-28, 3-136
- HEPA (High Efficiency Particulate Air) ventilation hoods, 1-205
- hepatic steatosis and foie gras, pathology of, 3-139
- hepatitis A, 1-155
- herb oil, Sous Vide Lemon Herb Oil, 2-330
- Herbed Cheese Spread, 4-57
- Herb-Embedded Pasta Veil, 3-383, 5-253
- herbs
 - antioxidants in, aging braises and pot roasts and, 2-98
 - Apicius on, 1-11
 - for brining or curing, 3-158
 - converting grams to volumes for, 5-XXXVIII
 - cryofreezing of, 2-458
 - freeze-drying, parametric recipe for, 3-372
 - microwaving, 3-310
 - Romans’ use of, 1-11
 - in sausage, 3-226
 - seasonal mélanges with, 3-295
 - volumetric equivalents for amounts of, 5-XLIV
 - water content of, 5-XLI
- Herman, Sergio, 1-70
- Hermé, Pierre, Onion tart and, 5-261
- Herodotus, 1-12
- Hesse, Angelina, 4-128
- Hesse, Walther, 4-128
- Hesser, Amanda, 1-188
- heterocyclic amines (HCAs), 1-220
- hex. *See* sodium hexametaphosphate
- hibiscus flowers, Foie Gras Torchon with Beet and Hibiscus Glaze, 4-158–159
- High Efficiency Particulate Air (HEPA) ventilation hoods, 1-205
- high-acyl (HA) gellan
 - for cold gels, parametric recipe for, 4-140
 - for hot fruit gels, parametric recipe for, 4-165
 - for hot gels, parametric recipe for, 4-160
 - as ion-based coagulant, 4-127
 - product guide for, 4-II–III
 - properties and uses of, 4-42–43, 72
- high-density lipoproteins (HDL), 1-226
- high-methoxyl (HM) pectin
 - for cold gels, parametric recipe for, 4-140
 - for edible films, parametric recipe for, 4-60
 - as gelling agent, 4-68
 - interactions with other thickeners, 4-44–45
 - product guide for, 4-II–III
 - properties and uses of, 4-42–43, 72
- high-pressure homogenizers
 - emulsifying with, 4-206, 208, 209
 - foam forming with, 4-252
- high-temperature, short-time (HTST) pasteurization, 1-188
- hijiki, 5-28
- histamines
 - intolerance to, 1-239
 - spoiled fish and poisoning from, 1-139
- Historic Lamb Curries plated-dish recipe, 5-89–99

- history, 1-2–101
 of evolution and revolution, 1-14–31
 of *Modernist Cuisine*, 1-82–91
 of *Modernist Cuisine* recipes, 1-92–101
 of Modernist revolution, 1-52–77
 of origins of cooking, 1-6–13
 of seeds of Modernism, 1-32–51
 timeline of Modernist recipes and techniques and, 1-78–81
- HLB (hydrophilic-lipophilic balance)
 values, 4-204
- HM pectin. *See* high-methoxyl pectin
- Hodgson, Robert, 4-338
- Hoffman, James, 4-396, 400
- hogs, roasting, 2-30–31
- Hokkaido squash, cooking sous vide,
 parametric recipe for, 3-289, 290
- holding food
 browned, in CVap water-vapor oven,
 2-159
 at target temperature, 2-247–249
- holding temperature. *See also* water
 baths
 “danger zones,” 1-175–176
 extended and simplified 6.5D
Salmonella reduction for, 1-192
 FDA Food Code time and
 temperature for, 1-184
 food safety misconceptions about,
 1-175–176
 maximum/minimum specifications
 for, 1-176
 for meat, food safety and, 3-78
 for pasteurization, 2-243, 3-233
 of refrigerators, 2-257
- Holiday Inn, Greenville, South
 Carolina, sous vide cooking and, 1-41
- hollandaise
 Bacon Jam, 4-229
 Deep-Fried Hollandaise, 4-228
 Eggs Benedict, 4-86
 Sous Vide Instant Hollandaise, 4-228
- Homer, 1-13, 3-220
- hominy, Shrimp and Grits, 3-377
- homogenizers
 high-pressure
 emulsifying with, 4-206, 208, 209
 foam forming with, 4-252
 rotor-stator. *See* rotor-stator
 homogenizers
 ultrahigh-pressure
 for Modernist kitchen, 2-284
 for reducing particle size, 2-398, 400
 for wet-grinding, 2-414, 422–423
 ultrasonic. *See* ultrasonic
 homogenizers
- Hon Dashi, 2-306, 5-197
- honey
 BBQ Caramels, 4-62
 Edible Bar Soap with Honey
 Bubbles, 4-267
 Saffron Honey Foam, 5-94
 Spiced Honey Glass, 5-121, 123
- honeydew melon, Compressed Melon
 Terrine, 3-392
- honshimeji mushrooms
 Compressed Dill Pickled Vegetables,
 5-55, 58
 cooking sous vide, parametric recipe
 for, 3-289
 French Scrambled Eggs, 4-93
- Hooke, Robert, 1-107
- Horchata (Chufa Milk), 4-59
- Horchata Foam, 5-239, 244
- Hormel, Jay Catherwood, 1-21
- horns, of ultrasonic homogenizers, 2-414
- horsepower, 1-272
- horseradish, Horseradish Foam, 4-284
- Horseradish Foam, 4-284
- hospital food in Sweden, sous vide
 technology for, 2-252, 265
- Hostess Brands, 1-76
- Hot and Cold Tea, 4-176, 182
- Hot Applesauce Terrine, 5-101, 103
- Hot Apricot Marshmallow, 4-293
- Hot Banana Gel, 4-166
- Hot Blood Pudding Custard, 4-221
- Hot Butter Foam, 4-283
- Hot Egg Mayonnaise, 4-227
- hot foods, cooling
 food safety and, 1-205–206, 2-256,
 257
 phase changes and, 1-290
 starchy plants and, 3-280, 282
- hot gels
 best bets for, 4-160
 examples of, 4-124
 fruit
 best bets for, 4-165
 parametric recipe for, 4-164–165
 parametric recipe for, 4-160–161
- Hot Green Apple Gel, 4-166
- hot liquids, thickened, parametric
 recipe for, 4-46–47
- hot mitts
 conduction in, 1-277, 280
 silicone, 1-280
- Hot Orange Gel, 4-167
- hot plates, digitally controlled
 for Modernist kitchen, 2-284
 for vacuum reduction, 2-380
- Hot Quince Gel, 4-167, 5-121
- Hôtel Moderne, 1-25
- hot-packing
 boiling-water canning and, 2-77
 heating requirements and duration
 for, 2-79
 packing food in canning jars for, 2-78
- hot-pickling tongue, 3-141
- hot-smoking, 2-143, 148, 3-211, 361
- hot-spring eggs, 4-75
 parametric recipe for cooking, 4-78
- House Barbecue Sauce, 4-49, 5-67
- House Bitters, 4-327
- House-Cured Bacon, 3-182, 5-17, 18
- How To. *See list of* Step-by-Step
 Procedures, LVI
- HPMC. *See* hydroxypropyl
 methylcellulose
- HTST (high-temperature, short-time)
 pasteurization, 1-188
- humectants, moisture content of food
 and, 2-428
- humidity. *See also* combi ovens;
 moisture; water-vapor ovens
 Activa and, 3-252
 baking and, 2-102, 111
 braising or pot-roasting in ovens
 and, 2-98
 coffee grind and, 4-376, 378
 in deep-frying, 2-115, 116–117,
 118–119, 125
 evaporation and, 1-319–321
 fermented sausage-making and, 3-246
 heat transfer and, 2-71
 ovens and, 2-153
- humidity (*continued*)
 relative. *See* relative humidity
 resting food and, 2-38
 in shallow frying, 2-127–128
 smoking and, 2-132, 141, 3-211
 flavor of smoke and, 2-138
 hot-smoking and, 2-148
 smoke from burning wood and,
 2-143
 testing oven controls for, 2-156–157
- humidity-controlled mode, in modern
 ovens, 2-156–157
- Humm, Daniel, Sous Vide Instant
 Hollandaise recipe, 4-228
- Humphries, Daniel, 4-375
- Hungarian Beef Goulash plated-dish
 recipe, 5-55–59
- hunter-gatherers, cooking by, 1-6
- hydration. *See also* rehydration
 approaches to, 4-20
 of cellulosic gums, 4-127
 of cooked roux, 4-22
 for gelling, 4-71
 of hydrocolloids
 for gelling, 4-124
 for thickening, 4-38, 40
- hydrocolloid gels, 3-250, 4-67, 68,
 124–175. *See also* hydrocolloids
 casting
 how to, 4-132
 in thick sheets, 4-134
 cellulose gum, 4-126
 best bets for, 4-171
 example recipes for, 4-172–175
 parametric recipe for, 4-170–171
 coating, 4-150–160
 best bets for, 4-151
 example recipes for, 4-152–160
 parametric recipe for, 4-150–151
 cold, 4-140–149
 best bets for, 4-140
 example recipes for, 4-141–149
 parametric recipe for, 4-140
 dairy, formation of, 4-102
 extruding gel noodles and, 4-138
 with peristaltic pump, 4-139
 films and veils from, example recipes
 for, 4-168–169
 fluid, 4-176–184
 best bets for, 4-177
 coarse, 4-179
 with concentrated premade stock
 gels, 4-179
 example recipes for, 4-180–184
 parametric recipe for, 4-177–179
 quick-setting, 4-179
 as thickeners, 4-19
 fruit and vegetable, hot, 4-164–167
 best bets for, 4-165
 example recipes for, 4-166–167,
 5-121
 parametric recipe for, 4-164–165
 hot, 4-160–167
 best bets for, 4-160
 example recipes for, 4-161–163
 parametric recipe for, 4-160–161
 hot fruit and vegetable
 best bets for, 4-165
 example recipes for, 4-166–167,
 5-121
 parametric recipe for, 4-164–165
 ion-coagulated, 4-124–127
- hydrocolloid gels (*continued*)
 example recipes for, 4-130–131
 how to use, 4-129
 from microbes, 4-126
 molding, 4-133
 of firm beads in cold oil, 4-136
 of firm droplets, 4-137
 in spheres, 4-135
 from plants, 4-126
 fruits of, 4-126
 marine, 4-126
 tubers and roots of, 4-126
 spherification with, 4-184–195
 best bets for, 4-187
 example recipes for, 4-188–195
 parametric recipe for, 4-186–187
 reverse, 4-187
 suspending solids in gelled spheres
 and, 4-187
 starches as, 4-126
- hydrocolloid gums
 flavor release by, 4-11
 grades, brand names, and
 proprietary blends of, 1-95
 natural sources for, 1-253
 organic label for, 1-245
 scaling using baker’s percentages
 and, 1-96–97
- hydrocolloids, 4-67, 68, 124–175. *See
 also* hydrocolloid gels; *specific types of
 hydrocolloids*
 enzymes as, 4-126
 health and safety of, 1-250
 hydration of, 4-40
 interactions with other thickeners,
 4-44–45
 ion reaction for spherification with,
 4-184
 as natural ingredient, 4-38
 product guide for, 4-II–V
 properties and uses of, 4-42–43
 proprietary blends, sources of, 4-41
 sequestrants and, 4-129
 suppliers of, 4-40
 texture-hydrocolloid combinations,
 overview, 4-VII
 as thickeners, 4-13, 19, 38–55
 example recipes for, 4-48–59,
 61–63, 5-67
 use of term, 4-124
- hydrogen bonds, 1-296, 298, 314, 332
- hydrolysis, 2-123, 247, 3-78–79, 118
- hydrophilic molecules, in surfactants,
 4-202, 244
- hydrophilic-lipophilic balance (HLB)
 values, 4-204
- hydrophobic molecules
 fats as, 4-199
 in surfactants, 4-202, 244
- hydrosol, in essential oils, 2-318, 320
- hydroxypropyl methylcellulose
 (HPMC)
 for cellulose gum gels, parametric
 recipe for, 4-170, 171
 interactions with other thickeners,
 4-44–45
 product guide for, 4-IV–V
 properties and uses of, 4-42–43
 hygiene, 1-196–207
 food, sous vide and, 2-199, 201
 ice cream bases and, 1-206
 kitchen, 1-200–205
 personal, 1-196–200

hygiene (*continued*)

temperature control for, 1-205–207
 hygroscopic materials, food drying and, 2-428
 hyperdecanting wine, 4-343–344
 hypermodern cuisine, 1-57
 hypertension, salt and, 1-234, 236–237
 hypothesis, of scientific theories, 1-218
 hysteresis, gel selection and, 4-73

ice

crystals of. *See* ice crystals
 forms of, 1-304
 freezing clear cubes of, 1-333
 heat conductivity of water vs., 1-299
 as phase of water, 1-300
 sublimation of, 1-326
 ice beer, freeze concentration of, 2-396
 ice cream
 Aerated Coffee Ice Cream, 4-312
 base for
 hygiene and, 1-196
 pasteurizing in sous vide bag, 1-206
 sous vide cook-chill of, 1-206
 FDA Food Code time and
 temperature for, 1-185, 187, 189
 freeze concentration of, 2-396
 freeze-drying, parametric recipe for, 2-451
 as frozen set foam, 4-247
 hot, as Modernist cuisine quest, 4-127
 ice-restructuring compounds and, 1-305
 liquid nitrogen and, 1-60–62, 311, 2-458
 pacotizing, 2-406, 407
 simplified recommendations for, 1-190
 vacuum inflation for foaming with, 4-254
 ice crystals. *See also* sublimation
 freeze concentration and, 2-396
 on frozen foods, 2-256–258
 thawing and, 2-262
 pacotizing and, 2-407
 ice wine, freeze concentration of, 2-396
 ice-brine baths
 freeze concentration and, 2-396
 freezing food in, 1-310, 2-260
 pros and cons of, 2-259
 vacuum packing and freezing in, 2-258
 ice-restructuring compounds, in fish, 1-305
 ice-water baths
 for cooling hot food, 1-206
 physics of not halting cooking with, 2-254
 pros and cons of, 2-255
 for quick chilling, 2-256
 for thawing, 2-263
 ID₅₀
 determining, science of, 1-115
 foodborne illnesses and, 1-115–116
 ideal gas law, 1-282
 Ideas in Food (blog), 1-66, 67. *See also* Kamoza, Aki; Talbot, H. Alexander
 Idiazábal cheese
 Idiazábal Gnocchi recipe, 4-123
 Quinoa and Idiazábal with Bonito Stock Veil, 4-168
 IDL (intermediate-density lipoprotein), 1-226
 ike jime method of slaughtering fish, 3-35, 37
 how to, 3-38
 Il Giardino d'Italia. *See* Boiardi, Ettore
 Iliad (Homer), 1-13

illnesses, foodborne. *See* foodborne illnesses; foodborne pathogens
 immediate service, sous vide and, 2-204–205
 immersion blenders. *See* handheld blenders
 immersion chillers, 2-238. *See also* water baths
 immersion circulators, 2-230, 234, 235, 237
 immiscible substances, 1-331, 332
 immune system, food allergies and, 1-238–239
 immune-compromised people, fermented or cured sausages and, 3-223
 impregnated fruits and vegetables
 example recipes for, 3-392–401, 5-285
 parametric recipe for, 3-390–391
 Impression, *Sunrise* (Monet), 1-17, 18
 Impressionism
 fading of, 1-72
 history of rough start for, 1-18–19
 Modernist avant-garde and, 1-52
 as revolution in art, 1-16–18
 Turner's paintings and, 1-33
 impulse sealers, 2-225, 284. *See also* vacuum packing
 inactivation, of viral pathogens, 1-152–153
 INAO (*Institut National des Appellations d'Origine*), 4-331
 Incas, gastronomy of, 1-13
 index of refraction, 4-203
 India, curries of, 3-196–197
 Indies Spice Blend, 2-403
 individual quick freezing, fluidized bed freezing for, 1-307
 induction burners, 1-274
 infections
 astrovirus, 1-155
 intestinal. *See also* diarrhea; *Salmonella* spp.
 giardiasis as, 1-128
 salmon-poisoning fluke and, 1-124
 invasive, 1-110, 133, 134–135
 noninvasive
 bacteria causing, 1-133, 135–136, 138–141
 definition of, 1-110
 infectious dose
 determining, science of, 1-115
 foodborne illnesses and, 1-115–116
 inflammation, heart disease and, 1-227
 inflammatory diarrhea, 1-114
 inflation, vacuum, foam forming with, 4-252, 254, 310
 informal recommendations, on food safety, 1-165
 infrared light
 blackbodies and, 1-285
 measuring, 1-287
 radiation and, 1-284
 infrared thermometers, 1-269, 2-286
 infusing flavor. *See also* chamber sealers; essences, aromatics
 into fats
 example recipes for, 2-329–331
 parametric recipe for, 2-328–329
 flavor-infused liquids and
 example recipe for, 2-313
 parametric recipe for, 2-310
 by cooking sous vide, 2-251

infusion, in coffee brewing, 4-364
 ingredients. *See also specific ingredients*
 converting grams to volumes for, 5-XXXIX–XL
 measurement of, 1-93
 weights and measures for, 1-94–95
 Modernist. *See* Modernist ingredients
 size of. *See* food size
 thickness of. *See* food thickness
 used in *Modernist Cuisine*, 1-93–94
 injectors, for accelerating brining, 3-158, 166, 174–175
 innards, 3-136–151
 blood as, 3-144
 bones as, 3-143–144
 cooking, 3-136–151
 fat and, 3-144–145
 gizzard as, 3-141–142
 heart as, 3-142
 intestines as
 characteristics and cooking of, 3-142–143
 for sausage encasement, 3-220
 kidney as, 3-141
 liver and foie gras and, 3-138–140
 marrow as, 3-143–144
 Offal Sous Vide, 3-146
 parametric recipe for cooking sous vide, 3-146
 as sausage binder, 3-222
 soaking in water or milk, 3-136
 stomach as, 3-142–143
 sweetbreads as. *See* sweetbreads
 tender, best bets for cooking sous vide, 3-146
 tongue as, 3-140–141. *See also specific types of tongue*
 tough, best bets for cooking sous vide, 3-146
 insoluble substances, 1-330
 Insta Cure No. 1, 3-158, 161
 Insta Cure No. 2, 3-161
 Instant Crème Fraîche, 4-57
 Instant Swiss Meringue, 4-284
 Instant Tofu Noodles, 4-172
 Institut National des Appellations d'Origine (INAO), 4-331
 institutional cooking, sous vide techniques for, 2-265
 insulators, low conductivity of, 1-277
 integrals, mathematical, definition of, 2-230
 intellectual property law, 1-70–72, 76
 intensity of power, calculating grill power and, 2-10
 intermediate muscle fiber, 3-15
 intermediate-density lipoprotein (IDL), 1-226
 internal energy, 1-264–265
 International Agency for Research on Cancer, 1-220
 Internet
 as Modernist ingredients source, 1-94
 Modernist innovation and, 1-59–60
 INTERSALT study, 1-236, 237
 intestinal tract infections. *See also* diarrhea; *Salmonella* spp.
 giardiasis as, 1-128
 salmon-poisoning fluke and, 1-124

- intestines
 characteristics and cooking of, 3-142–143
 for sausage encasement, 3-220
 “Into the Vegetable Garden,” 3-294, 4-37
 intracellular fluid, in raw foods, 1-305
 invasive infections, 1-110, 133, 134–135
 inverse-square law of light, 1-286
 Inverted Flame Firebox, invention of, 3-208
 inverters, for microwaves, 2-189
 Invincible Vinaigrette, 4-231
 ion-coagulated gels
 characteristics of, 4-124–127
 using, how to, 4-129
 ion-exchange filter, for purifying water, 1-335
 ionic bonds, 1-296
 ionic compounds, 1-330
 Ionnadis, John, 1-220
 ionotropic gelation, 4-184
 ions
 definition of, 1-330
 gel coagulation and, 4-68, 124–127
 gel selection and, 4-73
 hard water and, 1-335, 3-278
 hydrocolloid coagulation and, 4-70
 hydrocolloid hydration and, 4-40
 sodium, dissolved in water, 3-154
 iota carrageenan
 for cold gels, parametric recipe for, 4-140
 controlling syneresis with, 4-17
 for fluid gels, parametric recipe for, 4-177
 hot, as Modernist cuisine quest, 4-127
 interactions with other thickeners, 4-44–45
 as ion-based coagulant, 4-124, 129
 product guide for, 4-II–III
 properties and uses of, 4-42–43, 128
 for spherification, parametric recipe for, 4-187
 for thick foams, parametric recipe for, 4-278–279
 irradiation. *See* radiation
 irreversible changes
 measuring of, 1-268
 temperature and, 1-268, 270
 isomalt
 for edible films, parametric recipe for, 4-60
 for set foams, parametric recipe for, 4-288–289
 for thick foams, parametric recipe for, 4-278–279
 Italian sausage
 Italian Sausage, 3-242
 sweet, parametric recipe for, 3-236–237
 Italy
 early gastronomy of, 1-10–11
 espresso in, sociological role of, 4-374
 medieval cuisine in, 1-12
 Nouvelle cuisine in, 1-28–29
 Slow Food movement of, 1-23
 tradition and evolving cuisine of, 1-14–15
 wine regulation in, 4-332
 Iuzzini, Johnny
 Beet Flexicurd recipe, 4-219
 Green Tea Cake recipe, 4-292
 innovations of, 1-73
- J**
 Jaccard tenderizers
 for accelerating brining, 3-158, 166
 characteristics of, 3-51
 collagen mesh and, 3-76
 hazards with, 1-176
 meat juiciness and, 3-79
 jacking, 2-379, 396, 397
 jalapeño chips, parametric recipe for, 3-328
 Jaleo, 1-67
 James I of Aragon, 5-244
 Jamin. *See* Robuchon, Joël
 jamón Ibérico
 Ham Broth, 2-306
 Maillard reaction and, 3-173
 slicing, 3-50
 U.S. importation rules on, 1-173
 Japan
 blocking tuna in, 3-54
 meat-grading system in, 3-36
 seam cutting in, 3-47
 tuna prices in, 3-52
 Japanese rotary vegetable slicer, 3-327
 Japanese slow-cooked eggs, parametric recipe for cooking, 4-78
 Japanese stock, parametric recipe for, 2-296–297
 Japanese vegetable sheeter, 3-326
 Japanese yams, cooking sous vide, parametric recipe for, 3-292
 Jardin des Saveurs, 1-61
 jasmine essential oil, Apricot and Jasmine Puree, 5-171, 173
 Jean Georges, 1-73
 Jefferson, Thomas, 3-322
 Jell-O shot, 4-70
 jelly, Passion Fruit Jelly, 4-180
 Jenner, Edward, 2-85
 Jerusalem artichokes
 cooking sous vide, parametric recipe for, 3-289
 Jerusalem Artichoke Pudding, 4-31
 Pickled Jerusalem Artichokes, 5-125, 131
 puree of, parametric recipe for, 2-425
 John Dory
 cooking sous vide, parametric recipe for, 3-102
 in Seared Hamachi, 5-147, 149
 Jones, Curt, 1-61, 72
 Jones Soda Company, Turkey & Gravy seasonal flavor, 4-33
 joules, 1-272
 Joule, James Prescott, 1-272
Journal of Food Protection, 1-181
Journal of Wine Economics, 4-338
 juice. *See also* juicing
 apple. *See* apple cider/apple juice
 beef
 parametric recipe for, 2-344–345
 Sous Vide Beef Juice, 2-349
 centrifuge-spun, 2-360
 chicken, parametric recipe for, 2-344–345
 citrus, as acidifier, 2-314, 315
 clarifying with Buon Vino pressure filter, how to, 2-355
 concentrating flavor of, 2-379
 frozen, freeze-drying of, 2-446
- juice (*continued*)
 fruit, for acidic marinades, 3-195
 grape. *See* grapes; verjus
 from ground fruits or vegetables, 3-376
 keeping fresh taste of, 2-338–339
 juicers
 for raw food, 3-269
 types of, 2-332, 334
 juiciness
 acidic marinades and, 3-192–193
 cooking meat and seafood and, 3-79, 83
 of meat
 fat content and, 3-18
 from young vs. older animals, 3-79, 81
 juicing, 2-332–349
 chemistry and, 2-335
 with enzymes, 2-335, 336
 equipment for, 2-332–335
 example recipes for, 2-340–341
 by freezing, 2-335, 337
 with osmosis, 2-336
 with pectinase from plants, 2-336
 reducing, in vacuum, 2-381
 strategies for, 2-338, 339
 Julien, Honoré, 3-322
 Juneja, Vijay K., 1-180–181, 188, 190, 193
The Jungle (Sinclair), 3-35
 juniper berries
 infusion of, parametric recipe for, 2-310
 Juniper Brine, 5-35, 36
 Pork Tenderloin with Juniper, 5-35, 36
 junk food, obesity and, 1-23
 jus, 2-343–349
 beef
 Aged Rare Beef Jus, 5-5, 6
 Beef Tenderloin with Jus de Roti, 4-54
 parametric recipe for, 2-344–345
 rare, parametric recipe for, 2-344–345
 Sous Vide Rare Beef Jus, 2-349
 best bets for, 2-344–345
 bromelain for preparation of, 3-195
 characteristics of, 2-343
 chicken, brown, parametric recipe for, 2-344–345
 concentrating flavor of, 2-379
 example recipes for, 2-346–349, 347, 5-25
 Green Asparagus and Morels with Asparagus Jus, 2-341
 Jus de la Presse, 2-347
 Jus Gras, 4-237
 Lamb Garlic Jus in a Jar, 2-348, 5-25
 mushroom
 Mushroom Jus, 2-348
 parametric recipe for, 2-344–345
 mussel, parametric recipe for, 2-344–345
 parametric recipe for, 2-344–345
 Pomegranate and Garum Jus, 5-121, 122
 reduced, flavor of roux vs., 4-11
 Root Vegetable Jus, 5-161, 163
 salmon, rare, parametric recipe for, 2-344–345
 Sous Vide Prawn Jus, 2-347
 thickening strategies for, 2-346
 Toasted Oat Jus, 5-126, 133
- jus (*continued*)
 Truffle Jus, 4-53
 vacuum evaporation for reducing, 2-346

K

kabocha squash
 Braised Pine Nuts with Winter Squash, 5-60, 65
 cooking sous vide, parametric recipe for, 3-289, 290, 292
 Kæstur Hákarl, chemistry of, 3-43
 Kahan, Paul, Achatz's first meal at elBulli and, 1-38
 Kalbi Flank Steak, 3-199
 Kamoizawa, Aki
 Aerated Gruyère and, 4-312
 on blanching sous vide, 3-293
 on browned solids from clarified butter, 4-212
 chicken skin glued to scallops by, 3-252
 Compressed Melon Terrine recipe, 3-392
 on cooking whole chicken eggs, 4-75
 fast hot-spring eggs and, 4-78
 fish skin pillows of, 3-131
 gel filtration and, 2-369
 Goat Cheese Dumplings recipe, 4-105
 Ideas in Food blog and, 1-66, 67
 Modernist Béchamel and, 4-31
 Pasta Marinara recipe, 3-386
 Pulled Mushroom recipe, 3-396
 smoked eggs by, 4-100
 Whipped Yogurt Crisps recipe, 4-292
 Kanpachi Sashimi with Citrus Foam, 4-269
 Kansas City BBQ Sauce, 5-66, 68
 Kansas Rub, 5-66, 68
 kappa carrageenan
 for cold gels, parametric recipe for, 4-140
 for fluid gels, parametric recipe for, 4-177
 interactions with other thickeners, 4-44–45
 product guide for, 4-II–III
 properties and uses of, 4-42–43, 128
 Karabecue smoker, 3-208
 Karau, Bill, 3-208
 Kasper, Lynn Rossetto, 3-306
 katsubushi, 2-143
 Kaufman, C. W., 3-92
 Kaufman, Galen, 2-469
 Keller, Thomas
 Achatz's first meal at elBulli and, 1-38, 52
 Cauliflower Panna Cotta recipe, 4-142, 162
 Curry Oil recipe, 2-331
 New International cuisine and, 1-30–31
 oyster and pearls of, 5-205
 Red-Onion Cream recipe, 3-68
 Salmon Tartare Cornets recipe, 3-68
 sous vide cooking and, 1-73
 Tomato Powder recipe, 3-312
 kelp, 5-28
 Kelp Company, 4-40
 Kelvin, Lord, 4-246
 Kelvin Problem, 4-246
 Kelvin temperature scale, 1-266, 285–286

Kennedy, Rob, liquid nitrogen ice cream and, 1-63
 Kentucky BBQ Sauce, 5-66, 71
 Kentucky Fried Chicken franchise, 1-22–23, 76, 2-120
 Kerala Curry, 5-90, 91, 96
 keratin, in gizzards, 3-141
 ketchup
 Mushroom Ketchup, 5-11, 13
 as shear-thinning fluid, 4-6, 176
 ketosis, Atkins diet and, 1-242
 Keurig espresso machine, coffee capsules for, 4-400
 Keys, Ancel
 on fat and heart disease, 1-219, 224–225, 226
 on Mediterranean diet, 1-232
 on saturated fats, 1-234
 Keys to Good Cooking (McGee), 1-43
 Kick's law, 2-401
 kidneys
 characteristics of, 3-141
 cooking, 3-141
 sous vide, parametric recipe for, 3-146
 kielbasa, parametric recipe for, 3-236–237
 kilocalories, 1-272
 kilowatts, 1-272
 kimchi
 Kimchi, 3-352
 Watermelon Rind Kimchi, 5-285, 286
 kimchi consommé, parametric recipe for, 2-374–375
 Kinch, David
 Beef and Oyster Tartare recipe, 3-66
 Beef Cheek Pastrami recipe, 3-213
 Corn Croquette recipe, 3-341
 Corn Custard recipe, 4-122
 "Into the Vegetable Garden" and, 3-294, 4-37
 Modernist cuisine and, 1-67
 Strawberry Gazpacho recipe, 5-277
 Turbot with Onion and Marrow Broth recipe, 3-105
 king trumpet mushrooms, Pulled Mushroom, 3-396
 Kistler, Samuel Stephens, 4-72
 kitchen, Modernist. *See* Modernist kitchen
 kitchen hygiene, 1-200–205
 chef's accessories for, 1-202–203
 contaminants and, 1-200
 disinfecting procedures for, 1-200, 204
 technology of UV powder and, 1-201
 kitchen management, Escoffier's system for, 1-20
 kitchen space, contamination and, 1-200
 kitty litter, food safety and, 1-126
 kiwifruit
 compressing, parametric recipe for, 3-390
 impregnating, parametric recipe for, 3-390
 introduction of, 1-15
 Klock, Gerd, freeze filtration and, 2-369
 kminkowa, parametric recipe for, 3-236–237
 Knot Foie, 4-144
 Knox, Charles, 4-67

Koch, Robert, 4-128
 Kocuria, 3-165
 Koffmann, Pierre, 1-28
 kohlrabi, cooking sous vide, parametric recipe for, 3-289, 290, 292
 Kohman, E. F., 2-84
 Kokonas, Nik, 1-68, 69
 kombu. *See* seaweed
 Komm, Anatoly, 1-70
 konjac gum
 interactions with other thickeners, 4-44–45
 product guide for, 4-II–III
 properties and uses of, 4-42–43
 thickening with, parametric recipe for, 4-46, 47
 kori bustard, 1-253
 K-Paul's Louisiana Kitchen, 1-28, 29
 Kraft, James L., 1-24, 4-222
 Kroc, Ray, 1-21–22, 31
 kudzu starch, thickening with, 4-28
 parametric recipe for, 4-28
 Kumamoto oysters, in Shigoku Oyster with Fizzy Grapes, Fresh Wasabi, and Miso Powder, 5-197, 200
 kumquats
 cooking sous vide, parametric recipe for, 3-291
 Yuzu and Kumquat Marmalade, 3-356
 Kunz, Gray
 pacotizing by, 2-407
 Sous Vide and Pressure-Cooked Veal Breast with Bulbous Vegetables recipe, 3-111
 kuri squash
 Braised Pine Nuts with Winter Squash, 5-60, 65
 cooking sous vide, parametric recipe for, 3-289, 290
 Kurti, Nicholas
 Erice Conferences and, 1-44, 45
 liquid nitrogen ice cream and, 1-61–62, 65
 kuru, as prion disease, 1-158
 Kusshi oysters, Poached Oysters, 5-233, 236

L

La Broche, 1-57
 LA gellan. *See* low-acyl gellan
 La Marzocco, 4-398, 400
 L.A. Provincial cuisine, Puck and, 1-29
 La Reynière (aka Robert Courtine), 1-26
 La Varenne, École de, 4-322–325
 La Varenne, François Pierre de
 as chef to French ruling class, 1-8, 9
 French cuisine and, 1-19
 innovations of, 1-20
 laboratory scales, for measuring thickeners, 4-23
 laboratory sieves
 for filtering, 2-351, 352, 353
 for Modernist kitchen, 2-286
 lactase intolerance, 1-239
 lactic acid, as acidifier, 2-314
 Lactobacillus bulgaricus, 1-134
 Lactobacillus plantarum, 1-134
 Lactobacillus sanfranciscensis, 1-134
 Lactococcus lactis, 1-144
 lactose-free cream, centrifuging to separate, 2-368
 Ladenis, Nico, 1-62
 Nouvelle cuisine and individuality of, 1-28
 L'Air du Temps, 1-70
 Laiskonis, Michael
 Chili Pearls recipe, 4-145
 innovations of, 1-73
 Lake Nyos, Cameroon, carbon dioxide eruption from, 2-466
 laksa
 Burmese Chickpea Tofu Laksa, 4-121
 Laksa Broth, 2-307
 l'Amador, 1-70
 lamb. *See also* sheep
 aging, 3-41
 Braised Lamb Shoulder, 5-81, 83
 cooking
 differences for parts of, 3-18
 sous vide, parametric recipe for, 3-96, 109
 times for, 1-121
 fast-twitch vs. slow-twitch muscle in, 3-12
 Lamb Garlic Jus in a Jar, 2-348, 5-25
 leaner, using Activa for making, 3-255
 Poached Lamb Loin, 5-85, 87
 Rack of Lamb, 5-25, 29
 seam cutting, 3-45
 how to, 3-46
 searing before vacuum packing of, 2-268
 lamb stock, parametric recipe for, 2-296–298
 lamb sweetbreads, cooking sous vide, parametric recipe for, 3-146
 lambda carrageenan
 interactions with other thickeners, 4-44–45
 product guide for, 4-II–III
 properties and uses of, 4-42–43, 128
 thickening with, parametric recipe for, 4-46, 47
 Lamblia intestinalis, 1-127–128
 Landhotel Kirchdach, 1-70
 Lang, George, 5-55
 on Hungarian beef goulash, 5-55

- langoustines. *See also* prawns
 biology of, 3-28
 cooking sous vide, parametric recipe for, 3-103
 Seared Langoustine, 5-239, 245
- language, evolution of, 1-15
- lap cheong, parametric recipe for, 3-244–245
- L'Archestrate, 5-109
- lard, pork, chemistry of, 2-126
- larding, 3-84
- Larousse Gastronomique* (Montagné, 1938), 1-9
- Las Vegas, Nevada, New International cuisine in, 1-30
- lasagna, in oldest cookbook in English, 1-10
- laser (*laserpicium*), history of, 1-11–12
- lasers, for smoking, 1-69
- L'Astrance, 1-64
- latent heat of vaporization
 in AccuTemp griddles, 2-41
 as phase change, 1-290, 299–300
 science of how liquid nitrogen boils and, 2-457
 steaming and, 2-70
- Latin America
 Horchata drinks in, 4-59
 Incan and Mayan gastronomy of, 1-13
 wine innovation in, 4-332
- latte (caffè latte)
 as art form, 4-391–393
 composition of, 4-393
 milk foam in, 4-244
 patterns in, how to make, 4-394–395
- lava rocks, in gas grills, 2-11
- laws, U.S. *See also* U.S. Food and Drug Administration
 on advertising and label health claims, 1-214
 on distillation, 1-94, 2-384, 391
 on food safety, 1-165, 190
 local, for laboratory equipment, 1-94
- LBG. *See* locust bean gum
- LD₅₀, foodborne illnesses and, 1-115–116
- LDL (low-density lipoproteins), 1-226, 227
- Le Bernardin, 1-73
- Le Calandre, 1-70
- Le Postay, 1-70
- LEARN diet, 1-242
- leathers
 dehydrating formula for, 3-367
 Mandarin Leather, 3-369
- lecithin, soy
 de-oiled, for airs and froths, parametric recipe for, 4-264
 product guide for, 4-II–III
- leeks
 Charred Leek Oil, 5-17, 18
 cooking sous vide, parametric recipe for, 3-289
 dehydrating, parametric recipe for, 3-366
 Root Vegetable Jus, 5-161, 163
 Sous Vide Root Vegetables, 5-49, 53
- Lefevre, Clémence, 4-218
- legumes. *See also specific legumes*
 converting grams to volumes for, 5-XXXVI
 water content of, 5-XLI
- Leidenfrost, Johann Gottlob, 1-317
- Leidenfrost effect, 1-317, 2-464, 466
- lemon verbena
 infusion of, parametric recipe for, 2-310
 Lemon Verbena and Peach Froth, 4-273
- lemon zest infusion, parametric recipe for, 2-310
- lemongrass infusion, parametric recipe for, 2-310
- lemons
 as acidifier, 2-314
 Citrus Air, 4-265
 cooking sous vide, parametric recipe for, 3-291
 Eggless Citrus Curd, 4-234, 5-157
 Grapefruit and Black Pepper, 4-276
 Lemon Egg-Yolk Fluid Gel, 4-180
 Lemon Strips, 4-61
 Meyer Lemonade, 2-340
 Pickled Lemon, 5-273, 275
 Preserved Lemons, 3-350, 5-135
 for set foams, parametric recipe for, 4-288–289
 Sous Vide Lemon Curd, 4-227
- lentils
 Lentil Salad plated-dish recipe, 5-267–271
 puffed, parametric recipe for, 4-302
 Sous Vide Lentils, 5-267, 271
- Lespinasse. *See* Kunz, Gray
- lethal dose, foodborne illnesses and, 1-115–116
- lettuce
 cold-smoking, 3-361
 compressing, parametric recipe for, 3-390
 freeze-drying, parametric recipe for, 2-451, 3-372
 impregnating, parametric recipe for, 3-390
 romaine
 Caesar Salad, 3-373
 Smoked Lettuce, 5-11, 15
 water content of, 3-273, 276
- Leung, Alvin, Jr., 1-70
- libraries, rare-book, freeze-drying by, 2-444
- licorice
 Licorice Powder, 2-405
 Salmon Poached in Licorice, 4-155
- licorice root infusion, parametric recipe for, 2-310
- lids, for pot-roasting or braising pots, 2-96
- Liebrandt, Paul, 1-69
 Foie Gras Cherries recipe, 5-267
 Foie Gras Torchon with Beet and Hibiscus Glaze recipe, 4-158–159
 “Into the Vegetable Garden” and, 3-294
- Life of Luxury* (Archestratos of Gela, Sicily), 1-12
- light
 cooking meat and seafood and, 3-93–94
 infrared
 blackbodies and, 1-285
 measuring, 1-287
 radiation and, 1-284
 speed of, finding with microwave oven, 2-191
 ultraviolet. *See* ultraviolet radiation
- light foams, 4-270–277
 best bets for, 4-270
 example recipes for, 4-272–277
 parametric recipe for, 4-270
- lignin, smoked food and, 2-134
- limes
 as acidifier, 2-314
 Citrus Air, 4-265
 cooking sous vide, parametric recipe for, 3-291
 Cryopoached Green Tea Sour, 4-291
 Eggless Citrus Curd, 4-234
 Lychee and Lime Soda, 4-268
- Lindt, Rudolph, conche machine and, 2-404
- Ling Cod with Bergamot-Infused Milk, 3-103
- linguine, from gel sheets, how to make, 4-134
- links, sausage, 3-230, 240
- Linnaeus, Carl (Linné, Carl von), 1-112, 266
- lipids, 1-222. *See also* cholesterol; fats; oils
- lipoproteins, low-density, 1-226, 227
- liquamen, 3-195, 5-121
- liquids. *See also specific liquids*
 for breeding, 3-338
 carbonation of, 2-468
 clarifying with agar, 2-372–373
 cold, best bets for thickening, 4-46
 concentrating flavor of, 2-380
 convection of heat in, 1-282, 283
 converting grams to volumes for, 5-XXXVII
 fermented, intolerance to, 1-239
 filtering strategies for, 2-352
 hot
 best bets for thickening, 4-47
 physics of blowing on, 1-288
 internal energy, physics of, 1-301
 Newtonian, 4-6
 phase changes and thermal energy from, 1-290
 phases of, mouthfeel and, 4-10
 rheologic descriptions of, 4-VIII
 separating by centrifuging, 2-364
 shear-thinning, 4-6
 sous vide technique of extracting, 2-251
 thickening, 4-5
 vacuum packing
 with chamber sealer, 2-219
 physics of, 2-215
 viscosity of. *See* viscosity
- Liquid Center Duck Egg, 5-219, 220
- liquid nitrogen. *See also specific techniques using liquid nitrogen*
 acronym or abbreviation for, 2-456
 Adrià and, 1-39
 boiling, science of, 2-457
 cooking with, 2-456, 458, 459
 cryogenic freezing using, 2-456
 culinary life of, 1-60–66, 68, 70
 culinary strategies for using, 2-459
 freezing in vacuum of, 1-324
 freezing using, 1-310–311, 2-258
 fruit disassembly with, 2-458, 462
 ice cream freezing with, 1-311
 meat grinder rinsing with, 3-221, 224–225
 for Modernist kitchen, 2-284
 pacotizing and, 2-407, 410
 peeling eggs with, how to, 4-78
- liquid nitrogen (*continued*)
 pros and cons of, 2-259
 research laboratories' use of, 2-456
 safe handling of, 2-464, 466, 467
 sausage grinding and, 3-230
 sources of, 2-458
 viscosity of, 4-6
- Liquid Pimento Olive, 4-193
- liquid smoke
 chemistry of, 2-149
 for cold-smoking, 3-361
- liquor. *See also* alcohol (ethanol); *specific alcoholic beverages*
 distillation of, 2-384, 390
 production process for, 1-256
 seasoning with, 2-317
- Lirio, Jack, 1-26
- Lisińska, Grażyna, 3-322
- Listeria monocytogenes*
 as foodborne pathogen, 1-134
 nisin and replication of, 1-145
 refrigeration and, 2-257
 replication limits of, 1-145
 wine marinade with oregano against, 1-145
- listeriosis, 1-134
- liver. *See also specific animals*
 characteristics of, 3-138
 cooking sous vide, 3-146
- liver flukes, 1-123–124
- LM pectin. *See* low-methoxyl pectin
- LMA pectin, as gelling agent, 4-68
- lobster
 biology of, 3-28–30
 brining, parametric recipe for, 3-172
 cooking sous vide, parametric recipe for, 3-103
 freeze-drying, parametric recipe for, 2-451
 Jus de la Presse, 2-347
 Lobster Américaine plated-dish recipe, 5-184–187
 19th-Century-Style Lobster with Sherry and Cocoa, 3-107
 Poached Lobster, 4-219
 Poached Lobster Tail, 5-185, 187
 Salted, Freeze-Dried Lobster, 2-454, 5-185
 as seafood gel, 3-222
- lobster mushrooms
 cooking sous vide, parametric recipe for, 3-289
 Lobster Mushroom Confit, 5-185, 187
- local food, current buzz on, 1-248
- locust bean gum (LBG)
 for cold emulsions, 5-187
 for cold gels, parametric recipe for, 4-140
 controlling syneresis with, 4-17
 as foam stabilizer, 4-257
 for hot fruit gels, parametric recipe for, 4-165
 for hot gels, parametric recipe, 4-160
 interactions with other thickeners, 4-44–45
 natural source for, 1-253, 257
 product guide for, 4-II–III
 properties and uses of, 4-42–43
 separating butterfat from cream with, 2-366, 368
 source of, 4-124
 thickening with, parametric recipe for, 4-46, 47

- Long Island Iced Tea Gel Shot, 4-141
- lotus root
- Spot Prawn and Lotus Root Tempura with Smoked White Soy Sauce, 5-197, 201
 - Wok-Fried Malaysian Vegetables, 5-167, 169
- lotus root chips, parametric recipe for, 3-328
- L'Oustau de Baumannière, 1-49
- lovage, Romans' use of, 1-11
- Low Fat "Cream," 4-57
- low-acyl (LA) gellan
- for cold gels, parametric recipe for, 4-140
 - concentrations for fluid gels of, 4-V
 - for edible films, parametric recipe for, 4-60
 - for fluid gels, parametric recipe for, 4-177
 - as foam stabilizer, 4-257
 - for hot fruit gels, parametric recipe for, 4-165
 - for hot gels, parametric recipe for, 4-160
 - interactions with other thickeners, 4-44–45
 - as ion-based coagulant, 4-124, 127, 129
 - for light foams, parametric recipe for, 4-270
 - product guide for, 4-II–III
 - properties and uses of, 4-42–43, 72
 - for spherification, parametric recipe for, 4-187
 - for thick foams, parametric recipe for, 4-278–279
- low-carbohydrate diets, 1-242
- low-density lipoproteins (LDL), 1-226, 227
- Low-Fat Chicken Sausage, 3-248
- low-fat diets, 1-241
- low-methoxyl (LM) pectin
- for cold gels, parametric recipe for, 4-140
 - for edible films, parametric recipe for, 4-60
 - as gelling agent, 4-68
 - interactions with thickeners, 4-44–45
 - as ion-based coagulant, 4-124, 127, 129
 - product guide for, 4-II–III
 - properties and uses of, 4-42–43, 72
 - spherification using, 4-184
- low-pressure drying, 2-433
- low-temperature, long-time (LTLT) pasteurization, 1-188
- low-temperature cooking. *See also* target core temperature
- domestic ovens and, 1-207
 - of meat and seafood, 3-94–95
 - sous vide technique and, 2-242
 - thermometer accuracy and, 1-206–207
- low-temperature steam mode
- in combi ovens, 2-167
 - in CVap water-vapor oven, 2-158, 159
 - ovens using, 2-155
- LTLT (low-temperature, long-time) pasteurization, 1-188
- L20 (restaurant), 1-69
- Lucas Carton, wine pairing at, 4-352
- lungo
- blonding phase and, 4-388
 - evolution of, 4-379
- Lutaud, Christian, 1-34
- lutefisk, 3-200
- alkaline marinades for, 3-194
- lychees
- Fricassee of Fava Beans and Lychees, 5-171, 173
 - Lychee and Lime Soda, 4-268
 - preserving, parametric recipe for, 3-348
 - Shaved Foie Gras, 3-177
 - Spot Prawns with Foie Gras Nage, 4-233
- lyophilization, 2-444. *See also* freeze-drying
- M**
- Mac and Cheese, 3-387
- macchiato, 4-393
- mackerel
- cooking sous vide, parametric recipe for, 3-102
 - Mackerel with Spicy Tomato Skin, 4-175
- macroclimates, wine and, 4-329
- mad cow disease
- politics of, 1-160–161
 - prions and, 1-156
 - sheep and, 1-157
 - spread of, 1-159
- Madeira Gelée, 5-125, 131
- Madrid Fusión, 1-59
- magnesium, as alkali earth metal, 4-126
- magnetic stirring bar
- dispersing thickeners with, 4-24, 25
 - hydrating thickeners with, 4-26
 - hydrocolloid dispersion with, 4-38
 - for Modernist kitchen, 2-284
 - for vacuum reduction, 2-380
- Maillard, Louis Camille, 2-343, 3-92
- Maillard reaction
- baking and, 2-108
 - browning onions and, 3-277
 - century eggs and, 4-83
 - coffee roasting and, 4-358, 360
 - color changes in cooking meat and seafood and, 3-94
 - crustaceans and, 3-30, 87
 - deep-frying and, 2-122
 - dry-aging meat and, 3-41
 - flavors produced by, 2-198, 3-89–91
 - heterocyclic amines and, 1-220
 - history of, 3-92
 - meat cooking methods and, 2-343
 - modern methods of braising and, 2-98
 - mollusks and, 3-87
 - oil temperature and, 2-122
 - pot-roasting and, 2-96
 - pressure-cooking and, 3-298
 - ripening of cured meat or seafood and, 3-173
 - searing before vacuum packing and, 2-268
 - smoking and, 2-141
 - steak frying and, 3-74
 - stir-frying and, 2-48, 54
 - sugar in sausage and, 3-226
 - vegetables and, 2-58
- Mainstone, John, 4-9
- Maison Troisgros, 1-73. *See also* Troisgros, Pierre and Jean
- maitake mushrooms, Sautéed Maitake Mushroom, 5-11, 15
- malaise, general, common pathogens causing, 1-114
- Malaysian Aromatic Oil, 5-167, 168
- Malaysian Steamed Snapper plated-dish recipe, 5-167–169
- malic acid, as acidifier, 2-314
- Malt Vinegar Powder, 4-34
- maltodextrin
- as bulking agent with spray-dried powders, 2-442
 - drying plant foods with, 3-365
- maltodextrin DE 8, for edible films, parametric recipe for, 4-60
- maltodextrin DE 19, for set foams, parametric recipe for, 4-288–289
- Maltrin, thickening with, 4-30
- parametric recipe for, 4-30
- Maltrin M100
- for light foams, parametric recipe for, 4-270
 - for set foams, parametric recipe for, 4-288–289
- mandarins
- cooking sous vide, parametric recipe for, 3-291
 - Mandarin Leather, 3-369
- Manet, Edouard, 1-18
- mangoes
- Aerated Mango Sorbet, 4-311
 - cooking sous vide, parametric recipe for, 3-288, 290
 - dehydrating, parametric recipe for, 3-366
 - Green Mango and Cashew Salad, 5-167, 169
 - preserving, parametric recipe for, 3-348
- mannitol, Frozen White "Truffle," 3-400–401
- Manresa, 1-67
- maple syrup
- grades of, 5-77
 - Maple Vinegar Gastrique, 5-125, 128
 - production process for, 1-256
- Maple Vinegar Gastrique, 5-125, 128
- Marangoni effect, 4-353
- marbling
- tenderness and, 3-78
 - in Wagyu beef, 3-19, 36
- Marchesi, Gualtiero
- Nouvelle cuisine and, 1-28
- Risotto Milanese recipe, 3-306–307
- Marcona Almond Butter Paste, 5-281, 282
- Maremoto, 1-70
- margarine, health risks of butter vs., 1-231
- Marinated Crab Salad, 5-189, 191
- Marinated Geoduck, Young Ginger, Shiso, 5-197, 200
- Marinated Ogo, 5-175, 177
- Marinated Spaghetti Squash, 5-147, 149
- marinating, 3-190–207
- with acid, 3-192–193
 - with alcohol, 3-195, 198
 - with alkaline substances, 3-194–195
 - with curries, 3-196–197
 - of eggs, in vinegar, 4-75
 - with enzymes, 3-195
 - example recipes for, 3-199–206, 5-233
 - fermentation and, 3-198
- marinades for
- acidic, for stomach and intestines, 3-143
 - calcium chloride in, 3-76
 - strategies for, 3-192
- marine-based hydrocolloids
- gelling agents from, 4-68, 126
 - for kitchen use, 4-124
 - thickening agents from, 4-5, 19
- marmalade
- Mushroom Marmalade, 5-215, 217
 - Olive Marmalade, 4-99

- marmalade (*continued*)
 Roasted Scallion Marmalade, 5-253, 255
 Shiitake Marmalade, 5-5, 7
 Walnut Clam Marmalade, 5-229, 230
 “Marmite broth,” parametric recipe for, 2-304–305
- marrow. *See also* veal marrowbones
 characteristics and cooking of, 3-144
- Marshall, Agnes, 1-60, 64–65
- Marx, Thierry, 1-64
- Masala Curry, 5-90, 91, 98
- mascarpone cheese
 parametric recipe for, 4-56
 Shrimp and Grits, 3-377
- Mason, Sam
 aesthetics of nature in dishes of, 4-37
 chocolate water and, 2-374–375
 Modernist cuisine and, 1-67
- mass, conservation of, 1-331
- Massachusetts Institute of Technology,
 Carl G. Sontheimer Prize for
 Excellence in Innovation and
 Creativity in Design of, 2-412
- Massialot, François, French cuisine
 and, 1-19
- Master Cleanse, of toxins, 1-248
- master recipes, parametric recipes
 compared to, 1-97
- masting, as synchronized fruit ripening,
 3-284
- Mathematica (computer program),
 1-63–64, 282
- Matsuhisa, Nobu
 Miso-Cured Black Cod recipe, 3-179
 New International cuisine and, 1-30
- matsutake mushrooms, Bincho-Tan-
 Grilled Sea Cucumber Maitake
- Mushroom, Shisito Pepper, 5-197, 203
- Maurere, Wilhelm, 2-407
- maw, 3-142–143
- Maximin, Jacques, 1-34
 Broccoli and Hazelnut-Oil Puree
 recipe, 2-426
- Maxwell, James Clerk, 1-265, 285
- Mayans, gastronomy of, 1-13
- mayonnaise
 Basic Mayonnaise, 4-226, 5-233
 Eggless Mayonnaise, 4-232
 as emulsion, 4-199
 separation and, 3-224
 viscosity of, 4-204
 Hot Egg Mayonnaise, 4-227
 low-fat, 4-226
- MC. *See* methylcellulose
- MCC. *See* microcrystalline cellulose
- McCracken, Brain, Modernist raviolo
 al’uovo of, 4-190
- McCrary’s, 1-67, 83
- McDonald’s, corporate control and
 protests against, 1-22–23
- McGee, Harold
 biography of, 1-43
 Blumenthal and, 1-50
 on cold gels, 4-140
 Erice Conference and, 1-44, 45
 on experimental cooking, 1-57–58
 on flipping food during panfrying,
 2-38
 food science and, 1-5, 42, 44, 52
 Mac and Cheese recipe, 3-387
 on Modernist cuisine explosion, 1-46
 on searing meat to seal in juices, 3-85
- McGuckian, Ambrose T., 1-40
- measures
 conversion factors for,
 5-XXXVIII–XXXIX
 volume, converting, 5-XXXIX
 weights and, 1-94–95
- meats. *See also specific meats*
 aging of, 3-39
 enzymes and, 3-39, 41, 78
 holding at specific temperature
 and, 2-247–248
 artificial, 3-220. *See also* sausages
 blanching, 2-269
 brining, 3-152, 154–156, 158
 best bets for, 3-172
 equilibrium, how-to, 3-170–171
 speeding strategies for, 3-166, 173
 chemicals as preservatives for, 1-144
 chopping tools for, 3-230–233
 cold-smoking, parametric recipe for,
 3-210
 color of, 3-12, 14–15
 cooked, red droplets on, 3-14
 cooked and finely chopped,
 volumetric equivalents for
 amounts of, 5-XLIV
 cooking, 3-70–115
 on bone, 2-243
 braising, how to, 2-99
 collagen role in, 3-80–81
 color and appearance of, 3-92–93
 cooling strategies for, 2-256
 defects of cured meat, chemistry
 of, 3-165
 flavor and, 3-84, 87–91
 gelatin from, 4-67
 grilling and. *See* grilling
 ideal temperature for, 3-89
 innards of, 3-136–151
 juiciness and, 3-79, 83
 muscles and, 3-5
 myth of searing to seal juices and,
 3-85
 optics of, 3-93–94
 pot-roasting and, how to, 2-99
 red, in combi ovens vs. water baths,
 2-167–168
 safe, principles for, 1-191
 searing and, 2-58, 269, 3-85
 simplified cooking standards for,
 1-192
 skin and, 3-116–129, 133–135
 sous vide, 2-201, 276–279
 sous vide, on bone vs. fillet, 2-207
 stages from raw to cooked and,
 3-76, 78–79
 succulence and, 3-83–84
 tenderness and, 3-70, 76
 trade-offs in, 3-94–95
 white and gray droplets on surface
 during, 3-94
 cured, ripening of, 3-167, 173
 curing, 3-158–162, 165–166
 best bets for, 3-172
 speeding strategies for, 3-166, 173
 cutting, 3-44–50
 tools for, 3-230–233
 dark. *See* dark meat; red meat
 extended and simplified 6.5D
Salmonella reduction in, 1-193
 fat, as tough cut, science of, 3-83
 fat component of, 3-15, 18
- meats (*continued*)
 FDA time-and-temperature table for,
 1-183, 185, 187
 as fining agent, 2-359, 360
 flavor and temperature of, 3-88–89
 flavor of, Maillard reaction and,
 3-89–91
 freeze-drying, critical temperature
 for, 2-446
 gassing, for color, chemistry of, 3-95
 gels and. *See* meat gels
 glue and, 3-250–256, 4-70. *See also*
 Activa
 grading, 3-35–36, 39
 grinding
 grinders for. *See* meat grinders
 tools for, 3-230–233
 grinding fat and, how to, 3-228
 ground
 converting grams to volume for,
 5-XLII
 for stock, 2-290
 juiciness of, age of animal and, 3-79,
 81
 leftover, chemistry of flavor of, 3-91
 marinating, 3-190–207
 meat glue and, 3-250–256
 muscle and
 characteristics of, 3-6–19
 converting into meat, 3-32–36, 39,
 41–42
 punctured, hazards of, 1-176
 raw, 3-62–69
 example recipes for, 3-65–68
 fat content of, 5-XLIII
 red. *See* red meat
 resting
 effects of, 3-84
 juices and, 2-105
 restructured
 meat glue and, 3-250–256
 sausage as. *See* sausages
 salting. *See* brining; curing
 sausages. *See* sausages
 slaughtering practices for
 Grandin’s research on, 3-36
 quality and, 3-32, 34–35
 slicers for, 2-286, 3-44, 50
 smoking, 3-208–219
 best bets for, 3-210
 example recipe for, 3-213
 ideal surface for, 3-211
 parametric recipe for, 3-210
 sources for, 5-XXXIII
 for stocks, 2-288
 tartares and, 3-62–69
 temperature and flavor of, 3-88–89
 tender cuts of. *See* tender cuts of meat
 tenderizing enzymes in, 3-78
 tenderizing of
 food safety and, 1-191
 foodborne illnesses and, 1-176
 mechanical, 1-176, 191, 3-10, 50–51
 muscle structure and, 3-10
 tenderizers for, 1-176, 2-286. *See*
 also Jaccard tenderizers
 tenderness of, 3-10–11
 Warner-Bratzler tenderometer
 estimates of, 3-77
 tough cuts of. *See* tough cuts of meat
Trichinella contamination of, 1-117–
 118, 120, 121, 122, 179
- meats (*continued*)
 trimmings from, for searing flavor
 without presearing, 2-268
 vegetarian dishes simulating, 3-388
 water content of, 5-XL
 of young vs. older animals, juiciness
 and, 3-79, 81
- meat band saw, for Modernist kitchen,
 2-285
- meat batter, 3-222
- Meat Cuts and Muscle Foods* (Swatland),
 3-44
- meat gels
 embedding meat in, 3-250
 of emulsified sausages, 3-222
 myosin as, 3-70, 222–223
 for sausage-making, 3-70, 222–223
- meat glue, 3-250–256, 4-70. *See also*
 Activa
- meat grinders
 bit-and-plate, 3-231, 233
 cutaway illustration of, 3-229
 grinding plates for, typical aperture
 sizes of, 3-228
 liquid nitrogen rinse of, 3-221,
 224–225
- Meat Inspection Act, 3-35
- meat slicers
 Berkel, 3-44
 for Modernist kitchen, 2-286
 for very thin slices, 3-50
- meat tenderizers
 Jaccard. *See* Jaccard tenderizers
 for Modernist kitchen, 2-286
 penetrating, hazards with, 1-176
- meatballs, as coarse sausage, 3-222, 230
- meatloaf, as coarse sausage, 3-222
- mechanical tenderizing, of meat, 3-50–51
 food safety and, 1-191
 foodborne illnesses and, 1-176
 muscle structure and, 3-10
- medals, for wines, 4-338–339
- medical dietary systems, 1-222–239
- Mediterranean diet, 1-232, 241, 242
- medlars, bletting to ripen, 3-283
- Lo mejor de la gastronomía, 1-59
- melanoidin pigments, in fruits and
 vegetables, 2-267
- Melitta coffee brewer, 4-369
- melons
 Compressed Melon Terrine, 3-392
 compressing, parametric recipe for,
 3-390
 cooking sous vide, parametric recipe
 for, 3-288
 Ham Consommé with Melon Beads,
 4-48
 heat-treating, parametric recipe for,
 3-359
 impregnating, parametric recipe for,
 3-390
 Melon Caviar, 4-189
 Melon Water, 2-340
 preserving, parametric recipe for,
 3-348
 Prosciutto and Melon “Raw Egg,”
 4-194
 Watermelon Chips, 3-328
 Watermelon Meat, 3-394, 5-285
 Watermelon Rind Kimchi, 5-285, 286
 melon chips, parametric recipe for, 3-328
 melting points. *See also* freezing point
 of frying oils, 2-126

- membrane-type vacuum pumps
 filtration with, 2-354, 357
 for Modernist kitchen, 2-284
 vacuum reduction using, 2-380, 381
- membranes, reverse osmosis through, 2-379, 396
- memory
 Blumenthal's use of, 1-51
 García's use of, 1-57
- Memphis BBQ Sauce, 5-66, 70
- Memphis Rub, 5-66, 68
- Meneau, Marc, Cromesquis recipe, 3-340
- merguez, parametric recipe for, 3-236–237
- meringues
 Cryopoched Dill Meringue, 5-161, 165
 Green Olive Meringue, 4-298
 as set foam, 4-247
- meta-analysis
 definition of, 1-216
 of dietary fat and heart disease, 1-230
 randomized trials vs., 1-219
 of salt and hypertension, 1-236, 237
 of statins and heart disease, 1-227
- metal searing bars, in gas grills, 2-11
- metallic bonding, 1-296
- metals
 alkali earth, 4-126
 conductivity of, 1-277
- metastability
 of emulsions, 4-199
 of foams, 4-248
- methanol, as ethanol distillation by-product, 2-384
- Methocel E4M, for edible films, parametric recipe for, 4-60
- Methocel SGA 150, for edible films, parametric recipe for, 4-60
- methylcellulose (MC)
 for cellulose gum gels, parametric recipe for, 4-170, 171
 for filtering or clarifying, 2-352
 as fining agent, 2-359, 360
 foam, 4-255
 gels, best bets for, 4-171
 interactions with other thickeners, 4-44–45
 product guide for, 4-IV–V
 properties and uses of, 4-42–43
 Santamaria on, 1-258
 thermo-reversible gels from, 4-127
- methylcellulose A4C, for thick foams, parametric recipe for, 4-278–279
- methylcellulose E4M, for hot fruit gels, parametric recipe for, 4-165
- methylcellulose F50, for set foams, parametric recipe for, 4-288–289
- metmyoglobin, 3-93
- metric units, converting energy and power units using, 1-272–273
- Meyer Lemonade, 2-340
- miang kham, 5-189
- Miang Paste, 5-189, 190
- Miang Syrup, 5-189, 191
- micelle, 4-199
- Michelin Guide, 1-24, 26
- Micri, 4-29
- microaerophilic bacteria, 1-130
- microbes. *See also* bacteria; pathogens; viruses
 contamination by
 bad odors from sealed bags and, 2-214
 shellfish foraging and, 3-27–28
 gelling agents from, 4-126
 as germs, 1-106–109
 microbiology of, 1-106–109
 Pasteur on food spoilage and, 2-75
- microbial-based hydrocolloids, as thickeners, 4-19
- microbiology, 1-102–161
 of foodborne illnesses, 1-110–119
 of foodborne pathogens, 1-108–109
 of microbes as germs, 1-106–109
 microscopes for study of, 1-107
 of parasitic worms, 1-120–125
 of prions, 1-156–161
 of protists, 1-126–129
 scientific names in, 1-112
 of viruses, 1-152–156
- microclimates, wine and, 4-329
- microcrystalline cellulose (MCC)
 interactions with other thickeners, 4-44–45
 product guide for, 4-IV–V
 properties and uses of, 4-42–43
 as thickener, 4-12–13
 thickening with, parametric recipe for, 4-47
- microemulsions, science of, 4-205
- Micrographia* (Hooke), 1-107
- microorganisms, 1-106. *See also* bacteria; microbes; viruses
- microoxygenation (MOX), in viticulture, 4-330–331
- Microplane graters
 Adrià's use of, 1-36, 3-388
 cutting vegetables for frying with, 3-327
- microporous filtration, 1-335
- microscopes, history and parts of, 1-107
- microwave ovens
 characteristics of, 2-182–183, 189
 cutaway illustration of, 2-186–187
 drying in, 2-430
 FDA rules on, 1-189
 heating small foods slowly in, physics of, 2-188
 invention of, 1-22, 2-182–183
 for Modernist kitchen, 2-287
 moisture content of food and, 2-153
 myths and reality of, physics of, 2-190
 parts of, 2-184
 plant food cooking in, 3-310–313
 radiant heat from, 1-277
 safety, 2-190
 speed of light in, physics of finding, 2-191
 strategies for using, 2-185
- Microwaved Beef Jerky, 3-184, 5-43
- Microwaved Pistachio Sponge Cake, 4-294
- Microwaved Tilapia with Scallions and Ginger, 3-115
- microwaved vegetables
 example recipes for, 3-312–313
 parametric recipe for, 3-311
- Microwave-Fried Parsley, 3-312
- Microwave-Fried Parsley and Carrot Tops, 5-49, 53
- microwaves
 definition of, 2-182
 freeze-drying and, 2-444
- Middle Ages, gastronomy of, 1-12
- middle run, in distillation, 2-384
- Mie scattering, in emulsions, 4-203
- milk. *See also* milks
 allergies to, 1-238
 almond, parametric recipe for, 4-56
 butter from, 3-92
 Cappuccino Foam, 4-266
 carotenoid pigments and, 3-92
 Cauliflower Crème Anglaise, 4-89
 chocolate, as colloidal suspension, 4-176
 chufa. *See* chufa milk
 colors of, 3-92, 4-202
 cow, allergies to, 1-238
 dairy-based emulsions and, 4-218
 colors of, 4-202
 fat content and steaming of, 4-391, 392
 foaming agent in, 4-251
 fresh, frigi-canning and, 2-84
 goat
 carotenoid pigments and, 3-92
 color of, 4-202
 Goat Milk Ricotta, 4-108
 hydrating LA gellan with, 4-124–125
 Milk Foam, 5-31, 33
 Milk Skin, 5-205
 Milk Skin with Grilled Salsify and Truffle Puree, 4-114
 as oil-in-water emulsion, 4-199
 parametric recipe for, 4-56
 powdered, in fermented sausage, 3-246
 soy
 Frozen White "Truffle," 3-400–401
 Soy Milk, 4-58
 steaming
 for espresso, 4-391–395
 how to, 4-390
 Strawberry Milk Shake, 2-473, 5-11
 Toasted Rice Milk, 4-59
 viscosity of, 4-6
- milk curd, basic, parametric recipe for, 4-104
- Milk Foam, 5-31, 33
- milk frother. *See also* Aerolatte milk frother
 for espresso, 4-391
 foam forming with, 4-258, 260
- milk shake machine
 foam forming with, 4-258, 259
 for Modernist kitchen, 2-287
- Milk Skin, 5-205
- Milk Skin with Grilled Salsify and Truffle Puree, 4-114
- milks, making, best bets for, 4-56
- Millau, Christian, 1-24, 26
- milling. *See also* grinding; pureeing
 equipment for, 2-401–402, 404. *See also* colloid mills
 example recipes for, 2-419, 3-377
 frozen nuts, 3-374
 of plant foods, 3-376–377
 strategies for, 2-400
- minerals, dissolved. *See also* dissolved materials
 hard water and, 1-335
- minibar (restaurant), 1-63, 67
- Minnesota Coronary Survey, 1-229, 230
- mint, freeze-drying, parametric recipe for, 3-372
- miracle berry, Nigerian, 2-465
- mirepoix, for stocks, 2-288
- mirin, Yakitori, 3-201
- miscible substances, 1-331, 332
- Miso-Cured Black Cod, 3-179
- Miso-Cured Egg Sheets, 4-87
- miso-cured egg yolks, parametric recipe for, 4-82
- mixers
 foam forming with, 4-258
 for Modernist kitchen, 2-287
- MKS (meter, kilogram, second) units, 1-272
- mock dishes, types of, 3-388
- Mock Turtle Soup, 2-394
- modern ovens. *See also* combi ovens; convection ovens; CVap water-vapor ovens; microwave ovens; ovens; water-vapor ovens
 heat and humidity control testing in, 2-156–157
 improvement proposals for, 2-167
 temperature control by, 2-112
- ModernCure, for brining or curing, 3-158
- Modernism. *See also* Modernist cuisine
 as megatrend in culture, 1-17–18
 Nouvelle cuisine and, 1-52, 56
 as revolution in culture, 1-52
- Modernist Béchamel, 4-31
- Modernist Burrata, 4-109
- Modernist cuisine
 Achatz and, 1-68
 Adrià, elBulli, and, 1-33–40
 in America, 1-67
 Blumenthal, The Fat Duck, and, 1-49–51
 Capel and, 1-59
 in Chicago, 1-69
 copying in, history of, 1-71
 critical responses to, history of, 1-62–63
 cryogens in, 1-60–66, 68, 70
 forms of dishes in, 1-54–55
 future of, 1-72–73, 76–77
 history of, 1-32–51
 ideas and owners in, 1-70–72
 Ideas in Food blog and, 1-66, 67
 ingredients for. *See* Modernist ingredients
 kitchen for. *See* Modernist kitchen
 novelty as cult in, 1-58–60
 Pralus and, 1-42
 principles of, 1-56
 as revolution, 1-5, 52–77
 Roca and, 1-58
 Santos and, 1-59
 science in the kitchen and, 1-42, 44–49
 seeds of, 1-32–51
 sous vide at home and, 1-73
 in Spain, history of, 1-57
 spread of, 1-38–40
 Steingarten and, 1-65
 timeline of recipes and techniques in, 1-78–81
 trade secrets and, history of, 1-76
 utensils and plating styles in, 1-74–75
 vacuum packing and, 1-40–42
 wine pairing and, 4-352
 around the world, 1-70

- Modernist Cuisine*
 baker's percentage in, 1-95–97
 credit for recipes in, 1-100–101
 guide to, 1-89–91
 ingredients and equipment in, 1-93–94
 photographs in, 1-88–89
 recipes in, 1-92–101
 types of, 1-97–100
 weights and measures in, 1-94–95
 writing and producing, story of, 1-82–91
- Modernist Fried Chicken, 3-337
- Modernist ingredients, 1-250–259
 as additives, perceptions of, 1-252–254
 chemical processes for, 1-250–252
 chemical processing of common foods in, 1-256
 as chemistry, health concerns about, 1-212
 informed decisions about, 1-258–259
 natural ingredients vs., 1-254–255
 new naturals for, 1-257
 Santamaria's claims about, 1-258
 sources for, 5-XXXIII
- Modernist kitchen, 2-280–473
 concentrates in, 2-378–397
 cryogenic freezing and carbonation in, 2-456–473
 drying in, 2-428–455
 equipment for, sources of, 5-XXX–XXXII
 extracting flavors in, 2-288–317
 filtering in, 2-350–377
 infusing essences in, 2-318–331
 juicing in, 2-332–349
 particle size reduction in, 2-398–427
 tools for
 classic, 2-287
 handy special-purpose, 2-285
 inexpensive but valuable, 2-286
 must-have, 2-284
 technology and, 2-283, 286
- Modernist raviolo al'uovo, 4-190
- Modernist sausages, example recipes for, 3-248–249
- modified starches
 best bets for thickening with, 4-30
 as foam stabilizers, 4-257
 natural source for, 1-257
 organic label for, 1-245
- modified-atmosphere packing, for sous vide, 2-212
- moist air, example recipes for cooking with, 2-176–177, 180–181
- moisture. *See also* humidity; hydration
 in deep-frying, 2-115, 116–117, 118–119, 125
 in food
 humectants and, 2-428
 microwave ovens and, 2-153
 in shallow frying, 2-127–128
 water-vapor ovens and. *See* CVap water-vapor ovens; water-vapor ovens
- Mojitos, Carbonated Mojito Spheres, 4-188
- molasses
 Blackstrap Molasses Country Ham, 3-183
 Molasses Butter, 2-331
- mold
 on canned food, sterilization process and, 2-80
 on ripening cured meat or seafood, 3-173
- molded spherification, 4-184
- molds, silicone, for Modernist kitchen, 2-286
- Molecular and Physical Gastronomy conference, Erice, Italy (1992), 1-44–46, 65
- molecular gastronomy
 critics on mad scientists and, 1-62
 goals of, historical shifts in, 1-47
 as Modernist cooking, 1-46–47
 origins of, 1-44
 This on, 1-46
- mollusks. *See also* clams; mussels; octopus; oysters; scallops; snails; squid
 biology of, 3-24–26
 Maillard reaction of, 3-87
- Monell Chemical Senses Center, 4-335
- Monet, Claude, 1-17, 18
- monkfish
 cooking sous vide, parametric recipe for, 3-102
 Monkfish with Constructed Skin, 3-132
 Monkfish with Mediterranean Flavors plated-dish recipe, 5-151–155
 in Seared Hamachi, 5-147, 149
 Sous Vide Monkfish Pavé, 5-151, 155
 uniform musculature of, 3-53
- monkfish liver, Ankimo Torchon, 3-147
- monoglycerides, as surfactant emulsifiers, 4-216–217
- monosodium glutamate (MSG)
 for brines and cures, 3-160
 safety of, 1-213
- monounsaturated fat, 1-222
- Montagné, Prosper, 1-9
- Monterey Jack cheese, Cheese in a Tube, 4-225
- moose, chronic wasting disease in, 1-159
- morels
 Green Asparagus and Morels with Asparagus Jus, 2-341
 Mushroom Puree, 5-215, 216
 Stuffed Morels, 5-113, 117
- Moroccan Batbout Flat Bread, 5-135, 139
- Morrison, William, 1-60
- mortadella, parametric recipe for, 3-238–239
- mortar and pestle, 2-400
- Morton Tender Quick curing salt
 for brining or curing, 3-158
 composition of, 3-161
- Moschion, 1-13
- Motecuizoma, 1-13
- motility, of bacteria, 1-130
- moto (restaurant), 1-67, 69, 72. *See also* Cantu, Homaro
- motorized aspirators
 for Modernist kitchen, 2-284
 vacuum filtration with, 2-356
 for vacuum reduction, 2-380
- motors, power output of, 1-274
- Moulard duck, foie gras production in, 3-138
- Mound Builders, gastronomy of, 1-13
- mouthfeel
 gel selection and, 4-73
 gelling with hydrocolloids and, 4-124
 importance of, 4-6, 10
 oils for deep-frying and, 2-126
 thickeners and, 4-12–13, 15, 17
 thickening and, 4-5
- MOX (microoxygenation), in viticulture, 4-330–331
- mozoku, 5-28
- mozzarella cheese
 Mozzarella Balloons, 4-110–111
 Mozzarella Powder, 2-411
- MSG (monosodium glutamate)
 for brines and cures, 3-160
 safety of, 1-213
- mucilage, of coffee beans, 4-358
- Mugaritz, 1-57. *See also* Aduriz, Andoni Luis
- Mughal Curry Sauce, 5-89, 90, 92
- mule duck, foie gras production in, 3-138
- Multiple Risk Factor Intervention Trial, 1-229
- multistep deep-frying, 2-122–123
- mung beans, puffed, parametric recipe for, 4-302
- Munster cheese, Alsatian Munster Sausage, 5-35, 39
- Murata, Yoshihiro
 Hon Dashi recipe, 2-306
 Peanut "Tofu" and and, 4-122
 Sea Urchin Tofu, Tokyo Negi, Sesame, Ponzu recipe, 5-197, 202
- muria, 5-121
- Muscat grapes
 Compressed Muscat Grapes, 5-109, 110
 in Shigoku Oyster with Fizzy Grapes, Fresh Wasabi, and Miso Powder, 5-197, 200
 White Grape Syrup, 4-52
- muscle fibers, 3-6
- muscles, 3-6–31
 in cephalopods, 3-24–25
 contracting, 3-8–9
 converting to meat or seafood of, 3-32–43
 cooking meat and seafood and, 3-5
 fast-twitch. *See* fast-twitch muscles
 fat and, 3-15, 18–19
 meat color and, 3-12–15, 16–17
 in seafood, 3-20–31
 slow-twitch. *See* slow-twitch muscles
 tenderness and, 3-10–11
 working of, 3-6–31
- museums, freeze-drying by, 2-444
- mushroom jus
 Mushroom Jus, 2-348
 parametric recipe for, 2-344–345
- mushrooms. *See also* specific types of mushrooms
 cooking sous vide, parametric recipe for, 3-289, 290
 dehydrating, parametric recipe for, 3-366
 freeze-drying, parametric recipe for, 3-372
 infusion of, parametric recipe for, 2-310
- mushrooms (*continued*)
 Mushroom and Bacon Cappuccino, 4-275
 Mushroom Broth, 5-11, 14
 Mushroom Ketchup, 5-11, 13
 Mushroom Marmalade, 5-215, 217
 Mushroom Omelet plated-dish recipe, 5-215–217
 Mushroom Puree, 5-215, 216
 Mushroom Swiss Burger plated-dish recipe, 5-11–15
 preserving, parametric recipe for, 3-348
 puree of
 Mushroom Puree, 5-215, 216
 parametric recipe for, 2-425
- Muslim Curry Sauce, 5-89–91, 93
- muslin sheets, for filtering, 2-351
- mussel jus, parametric recipe for, 2-344–345
- mussels
 biology of, 3-26, 27
 cooking sous vide, parametric recipe for, 3-103
 Mussels in Mussel Juice Spheres, 4-191
 Sous Vide Mussel, 5-151, 154
 Sous Vide Mussel Juice, 2-346
 Sous Vide Sole with Bergamot Sabayon, 4-274
- mustard
 Aromatic Alsatian Mustard, 5-35, 37
 Mustard Vinaigrette, 4-231
 Preserved Pear in Mustard Oil, 5-281, 283
- mustard seeds, preserving, parametric recipe for, 3-348
- Myhrvold, Nathan
 on first God shot, 4-375
 Pacojets and, 2-407
 on writing *Modernist Cuisine*, 1-83
- myocommata, 3-21
- myofibrils, 3-6, 8–9
- myoglobin
 cooked food color and appearance and, 3-92–93
 on cooked meat surfaces, 3-14
 gassing meat and, chemistry of, 3-95
 oxidation of meat and, 2-201, 3-12, 14
 oxygen levels and states of, 3-93
 in seal meat, 3-15
 searing meat and, 3-85
 in tuna, 3-21
- myosepta, 3-21
- myosin
 frictional heat and, 3-230
 Jaccard tenderizers and, 3-51
 as meat glue, 3-250
 in muscle, 3-6
- myotomes, 3-21, 23

- Nacka system, Swedish hospitals and vacuum packing using, 1-40
- nailbrushes
for handwashing, 1-196–197, 198
for mushroom washing, 1-199
- naked frying, 3-317, 321
best bets for, 3-320
chemistry of, 3-320
coated frying vs., 3-316, 318–319
- naked portafilters, 4-385. *See also* crotchless portafilters
- nanoemulsions, 4-238–239
example recipes for, 4-238–239
science of, 4-205
- nanofiltration, in viticulture, 4-330
- Nanophyetus salmincola*, 1-124
- Napa cabbage
Braised Napa Cabbage, 5-109, 111
Kimchi, 3-352
- Napoléon Bonaparte, 2-75, 84
- Napoleon III, 2-84, 4-331–332
- NASA (National Aeronautics and Space Administration), 1-40–42
- National Advisory Committee on Microbiological Criteria for Foods, 1-181
- National Aeronautics and Space Administration (NASA), 1-40–42, 195, 3-372
- National Gum and Mica Company, 4-40
- National Institutes of Health, 1-215
- National Pork Board, 1-179
- National Starch, 4-40
- National Toxicology Program, 1-220
- Native Americans, acorn cooking by, 1-6
- natural convection
from air, heat transfer coefficient of, 1-283
definition of, 1-282
- natural foods, toxins in, 3-267
- Navel Orange Salad, 5-135, 138
- navy beans
Baked Beans, 5-67, 77
Pressure-Cooked Tarbais Beans, 5-81, 83
- necrotizing enteritis, 1-141
- nectarines, cooking sous vide, parametric recipe for, 3-288
- nematodes, 1-120–123
anisakid, 1-122–123
Ascaris lumbricoides as, 1-123
Trichinella as. *See Trichinella spiralis*; trichinellosis
- nervous system, prion diseases and, 1-156–157
- Nespresso capsule system, 4-400
- nettles, cooking sous vide, parametric recipe for, 3-290
- neurologic symptoms, common pathogens causing, 1-114
- New American cuisine, history of, 1-28–29
The New England Journal of Medicine, 1-213
- New Guinea, cannibalism and kuru in, 1-159
- New International cuisine, history of, 1-29–31
- New York City
health department of
on salt content of processed food, 1-237
sous vide rules of, 1-188, 195
Modernist cuisine in, 1-69
New International cuisine in, 1-30
The New York Times Magazine, 1-188
- New Zealand, screw tops for wine bottles in, 4-344–345
- Newtonian fluids, 4-6
- Nigerian miracle berry, 2-465
- nigiri sushi, how to slice fish for, 3-60
- 19th-Century-Style Lobster with Sherry and Cocoa, 3-107
- nisin, as food preservative, 1-144–145
- nitrites. *See also* saltpeter; sodium nitrate
chemistry of, 3-160
in cured meats, safety of, 1-143
intolerance to, 1-239
in sel rose, 3-162
USDA on cured foods with, 3-165
- nitrites. *See also* sodium nitrite
benefits of, 3-165
chemistry of, 3-160
for food preservation, 1-144–145
USDA on cured foods with, 3-165–166
- Nitro Green Tea Sour, dramatic effects of, 1-51
- Nitro Scrambled Egg and Bacon Ice Cream, dramatic effects of, 1-51
- NitroCream LLC, 1-63
- nitrogen
Guinness beer cans pressurized with, 4-251
liquid. *See* liquid nitrogen
phase diagram of, 1-303
solubility in water of, 1-330, 333, 4-243
wine preservation with, 4-346, 348
- nitrogen dioxide, 3-95
- nitrosamines
chemistry of, 3-160
conversion of nitrates into, 3-165–166
in cured meats, safety of, 1-143
- nitrous oxide (NO₂)
as foaming gas, 4-255, 256
solubility in water of, 1-332
- Noble, Ann, 4-339
- Nobu, New International cuisine and, 1-29
- Noguchi, Soichi, 2-445
- Noma, 1-70. *See also* Redzepi, René
- noncirculating water baths, for sous vide cooking, 2-232, 234
- nonclimacteric fruits, ripening, 3-283–284
- noninflammatory diarrhea, 1-114
- noninvasive infections
bacteria causing, 1-133, 135–136, 138–141
definition of, 1-110
- nonionic compounds, 1-330
- nonmedical dietary systems, 1-240–249
- nonpolar, definition of, 4-199
- nonpolar solvents, 1-330
- noodles. *See also* pasta
freeze-drying, parametric recipe for, 2-451
gel, how to extrude, 4-138
with peristaltic pump, 4-139
- Norén, Nils
on agar for clarifying liquids, 2-372
Beet Juice-Fed Oysters recipe, 3-206
Centrifuged Roasted-Hazelnut Oil recipe, 2-367
on Fizz-Giz system, 3-207
freeze filtration and, 2-369
French fries by, 3-322
Parmesan “Polenta” recipe, 4-181
Pectinase-Steeped Fries recipe, 3-324
Pressure-Cooked Egg Toast recipe, 4-97
pressure-cooked stock testing by, 2-87
on unvented pressure-cookers for stocks, 2-292
- normale, evolution of, 4-379
- noroviruses (Norwalk-like viruses)
food contamination by, 1-154
foodborne illnesses due to, 1-153–154
spreading, mathematics of, 1-153
- North Carolina (Eastern Region) BBQ Sauce, 5-66, 70
- North Carolina (Lexington-Style) BBQ Sauce, 5-66, 71
- “The Nose Smells What the Eye Sees,” 4-335
- nostalgia. *See* memory
- nougatine, Dried Cherry and Hazelnut Nougatine, 5-267, 270
- Le Nouveau Guide*, 1-24, 26
- Nouvelle cuisine
Adrià’s study of, 1-34
development of, 1-5, 24, 26–31
Modernism and, 1-52, 56
reductions and, 4-11
stocks vs., for extracting flavors, 2-288
- Nouvelle Première trains, France, 1-41
- Novation Prima 600, thickening with, 4-30
parametric recipe for, 4-30
- novelty, cult of, 1-58–60
- NSEW technique, for grooming espresso, 4-381, 383
- nucleate boiling, 1-316, 317
thin sauces and, 2-68
- nucleation sites
boiling and, 1-316
in a Champagne flute, 4-333
etched on glass, for beer or Champagne, 4-251
phase changes and, 1-304
- nucleus of the solitary tract, 4-341
- Nukazuke, 3-354
- Nurses’ Health Study, 1-214, 230–231, 241
- nut butter
milling, 2-418
for set foams, parametric recipe for, 4-288–289
- nutmeg extract, parametric recipe for, 2-326
- nutmeg infusion, parametric recipe for, 2-310
- nutritional epidemiology, 1-218–220
- nuts. *See also specific types of nuts*
about, 5-244
converting grams to volumes for, 5-XXXVII
frozen, milling of, 3-374
- nuts (*continued*)
milling, 3-376
seasonal mélanges with, 3-294
typical
fat content of, 5-XLIII
water content of, 5-XLI
volumetric equivalents for amounts of, 5-XLV
- N-Zorbit (N-Zorbit M)
for edible films, parametric recipe for, 4-60
- Spinach Paper, 3-369
- thickening with, 4-5, 7, 13, 19, 30, 34–36
parametric recipes for, 4-30, 60

O

- oats
 Candied Puffed Oats, 5-125, 128
 Sous Vide Clam and Oat Risotto, 3-308
 Toasted Oat Jus, 5-126, 133
- obesity, 1-23, 243
 weight loss diets and, 1-240–241
- observation bias, nutritional studies and, 1-218
- octopus
 biology of, 3-24–25
 cooking sous vide, parametric recipe for, 3-108
 Smoked Octopus, 3-215
 Sous Vide Octopus, 5-193, 194
- odds ratio, nutritional studies and, 1-219
- odors
 agreeable. *See* aromas
 bad
 microbial taints and, 1-135
 from sealed bags, 2-214
 offensive, when cooking cured meat or seafood, 3-165
 of urine, asparagus and, 4-350
Odyssey (Homer), 1-13, 3-220
 Oeufs en Meurette plated-dish recipe, 5-219–221
- offal. *See* innards
- ogo, 5-28
 Marinated Ogo, 5-175, 177
- oil-in-water (O/W) emulsion
 continuous phase and, 4-199
 creaming as failure of, 4-210
 nanoemulsions as, 4-238–239
- oil-in-water-in-oil (O/W/O) emulsion
 Bancroft's rule and, 4-203
 continuous phase and, 4-199
- oils, 2-114–131. *See also* essential oils; frying; *specific types of oils*
 chemical changes in, heat-induced, 2-123–125
 coffee brewing in, 4-371
 confit cooking in. *See* confits
 cryopoaching, 2-460
 emulsifiers in, 2-123, 125
 extracting flavor with, 2-323
 flash points of, 2-126
 flavored
 Centrifuged Roasted-Hazelnut Oil, 2-367
 Curry Oil, 2-331
 Sous Vide Lemon Herb Oil, 2-330
 Spiced Chili Oil, 2-330
 for frying, chemistry of, 2-126
 hydrocolloid hydration and, 4-40
 hydrolysis of, 2-123
 melting points of, 2-126
 saturated vs. unsaturated, 2-126
 for sautéing, 2-44
 for shallow frying, 2-127–128
 smoke points of, 2-116, 125, 126
 smoking, parametric recipe for, 3-362
 stability of, 2-126
 thickening, 4-13
 typical, fat content of, 5-*XLIII*
 vacuum frying and, 2-128
- okra
 Crispy Okra, 5-90, 97
 preserving, parametric recipe for, 3-348
 Raw Okra, 5-97
- oleic acid, 1-233, 234
- oleoresins, 2-320
- olive oil
 Black Olive Oil, 5-193, 195
 chemistry of, 1-233, 2-126
 fatty acids in, 1-234
 heart disease and, 1-232, 234
 Olive Oil Gummy Worms, 4-147
 Olive Oil "Margarine," 4-235
 Olive Oil Noodles, 4-146
 Olive Oil Spread, 4-51
 smoking, parametric recipe for, 3-362
 Thickened Oil, 4-230
 Vanilla Olive Oil Powder, 4-35
- olives. *See also* Black Olive entries; green olives
 preserving, parametric recipe for, 3-348
- omega-3 fats, 1-231–232
- Omelet Base, 5-215, 217
- omelets
 in combi oven vs. conventional oven, 4-95
 Ham and Cheese Omelet, 4-95
 Japanese (tamago), parametric recipe for, 4-92
 Mushroom Omelet, 5-215–217
 Omelet Base, 5-215, 217
 parametric recipe for, 4-92
- On Food and Cooking* (McGee), 1-42, 43, 44, 49, 3-85
- 1D reduction, in bacteria for sanitizing food, 1-148, 149
- 160 Bloom gelatin
 for airs, parametric recipe for, 4-264
 for cold gels, parametric recipe for, 4-140
 for edible films, parametric recipe for, 4-60
 for fluid gels, parametric recipe for, 4-177
 for hot fruit gels, parametric recipe for, 4-165
 for light foams, parametric recipe for, 4-270
 for set foams, parametric recipe for, 4-288–289
 for thick foams, parametric recipe for, 4-278–279
 thickening with, parametric recipe for, 4-47
- onions
 Autoclaved Onion Soup, 3-302
 compressing, parametric recipe for, 3-390
 cooking sous vide, parametric recipe for, 3-289, 290
 dehydrating, parametric recipe for, 3-366
 Freeze-Dried Onion Powder, 3-373, 5-261, 263
 freeze-drying, parametric recipe for, 3-372
 Glazed Pearl Onion, 5-261, 263
 impregnating, parametric recipe for, 3-390
 Onion Arlette, 5-261, 262
- onions (*continued*)
 Onion Fluid Gel, 4-183
 Onion Gratin, 5-261, 265
 Onion Rings, 3-342–343, 5-11
 Onion Sablé, 5-261, 263
 Onion Stock, 5-261, 264
 Onion Tart plated-dish recipe, 5-261–265
 puree of, parametric recipe for, 2-425
 Root Vegetable Jus, 5-161, 163
 smoking, parametric recipe for, 3-362
 Sous Vide Glazed Pearl Onion, 5-219, 221
 Sous Vide Root Vegetables, 5-49, 53
 Sweet Onion Salsa, 5-175, 177
 Sweet-and-Sour Cipolline Onions, 5-17, 19
 Turbot with Onion and Marrow Broth, 3-105
- onsen eggs, parametric recipe for cooking, 4-78
- onsen tamago, 4-75, 78
- oocysts
Cryptosporidium parvum, 1-129
 definition of, 1-115
Entamoeba histolytica, 1-129
Giardia intestinalis, 1-129
Toxoplasma gondii, hardiness of, 1-126, 129
- opacity
 of emulsions, 4-203
 gel selection and, 4-73
- "OpenCola," 4-239
- optics
 cooking meat and seafood and, 3-93–94
 of emulsions, physics of, 4-203
- Orange Soda, 2-472
- oranges. *See also* blood oranges
 as acidifier, 2-314
 Candied Orange and Carrot Pulao, 5-94
 cooking sous vide, parametric recipe for, 3-291
 Hot Orange Gel, 4-167
 Ling Cod with Bergamot-Infused Milk, 3-103
 Mandarin Leather, 3-369
 Navel Orange Salad, 5-135, 138
 Orange Soda, 2-472
 Yuzu and Kumquat Marmalade, 3-356
- oregano, antimicrobial properties of wine and, 1-145
- organ meats. *See* innards
- organic food
 as dietary system, 1-245–247
 pesticides and, 1-252–253
- Ornish, Dean, 1-242, 244
- O'Shea, Jack, 3-48
- Osmanthus vinegar, about, 5-172
- osmosis
 brining and, 3-154
 drying with salt and sugar and, 3-346
 freezing and thawing liver and, 3-138
 juicing and, 2-335, 336
 reverse. *See* reverse osmosis
- osmotic pressure, juicing and, 2-335
- Osso Bucco Milanese plated-dish recipe, 5-60–65
- Osteria La Francescana, 1-70
- ostrich, cooking sous vide, parametric recipe for, 3-99
- Ostwald ripening
 as emulsion failure, 4-212
 in foams, 4-249
 ouzo/pastis effect and, 4-211
- Oud Sluis, 1-70
- L'Oustau de Baumannière, 1-49
- outgassing, decanting wine and, 4-342, 343
- Outhier, Louis, 1-26
- ouzo effect, science of, 4-211
- oven finishing, in sous vide cooking, 2-270
- oven mitts
 conduction in, 1-277, 280
 silicone, 1-280
- ovens, 2-150–191
 braising using, 2-96
 combi. *See* combi ovens
 convection. *See* convection ovens
 conventional, convection and radiant heat in, 1-286
 evolution of uses for, 2-101
 foam forming with, 4-258
 humidity in, 2-102
 heat control and, 2-153
 manufacturers of, "BTU" as used by, 1-272
 microwave. *See* microwave ovens
 modern. *See also* combi ovens; CVap
 water-vapor ovens; water-vapor ovens
 heat and humidity control testing in, 2-156–157
 improvement proposals for, 2-167
 temperature control by, 2-112
 for Modernist kitchen, 2-284
 moist air, 2-154–181
 pot-roasting using, 2-96
 temperature control in, 1-207
 thermostats for, 2-111
 vacuum, 2-433, 4-310
 water-vapor. *See* water-vapor ovens
 wood-fired, 2-26–27, 33
- overcooking
 food safety rules and, 1-170, 191
 reheating and, 2-264
- O/W (oil-in-water) emulsion
 continuous phase and, 4-199
 creaming as failure of, 4-210
 nanoemulsions as, 4-238–239
- O/W/O (oil-in-water-in-oil) emulsion
 Bancroft's rule and, 4-203
 continuous phase and, 4-199
- oxidation
 aging braises and pot roasts and, 2-98
 of fats
 dry-aging meat and, 3-41
 freezer taste and, 1-306
 flavor changes in frozen food and, 2-261
 food preservation and, 2-252
 myoglobin pigment in meat and, 2-201
 vacuum packing and, 2-208
- oxtail
 Boeuf in Gelée, 4-163
 cooking sous vide, parametric recipe for, 3-109
 Glazed Oxtail, 5-49, 50
 Oxtail Consommé, 2-376

oxtail (*continued*)

- Oxtail Pho Broth, 2-307
- Pot au Feu Consommé, 5-49, 52
- oxygen
 - myoglobin color in meat and seafood and, 3-92–93
 - removal from unfinished wine bottles, 4-346
 - solubility in water of, 1-330, 333, 4-243
- oxygenation
 - decanting wine and, 4-342–343
 - wine aroma and, 4-350
- oxymyoglobin, 3-93
- oyster mushrooms
 - cooking sous vide, parametric recipe for, 3-289
 - Pigeon with Shellfish Butter, 3-100
- oysters
 - Beef and Oyster Tartare, 3-66
 - Beet Juice-Fed Oysters, 3-206, 5-233
 - biology of, 3-26, 27
 - Burmese Chickpea Tofu Laksa, 4-121
 - cold-smoking, parametric recipe for, 3-210
 - contamination of, 3-28
 - cooking sous vide, parametric recipe for, 3-103
 - fecal contamination of, 1-117
 - noroviruses and, 1-153, 155
 - Oyster Beignet, 5-25, 28
 - Oyster Butter Emulsion, 5-233, 236
 - Oyster Consommé, 5-205, 206
 - Oyster Escabeche, 5-205, 206
 - Oyster Stew plated-dish recipe, 5-205–207
 - Oysters with Cava Foam, 4-277
 - Oysters Guggenheim Bilbao, 1-57
 - Oysters with Mignonette Air, 4-265
 - Poached Oysters, 5-233, 236
 - seasonal ban on, politics of, 1-171
 - Shigoku Oyster with Fizzy Grapes, Fresh Wasabi, and Miso Powder, 5-197, 200

P

- packaging, plastic
 - for edge sealers, 2-222
 - for impulse sealers, 2-225
 - molding sausage with, 3-241
 - selection of, 2-210–211
 - sous vide cooking and, 2-207
- Pacojet, 2-406–411
 - breaking down food with, 2-398, 400, 406–411
 - example recipes for, 2-410–411
 - history of, 2-407
 - meat batters made in beaker of, 3-231, 233
 - for Modernist kitchen, 2-284
 - tartares and raw meat preparation with, 3-62
- Pacojet Pea Soup, 2-410
- pacotizing, 2-406–411
- Pad Thai, 3-385
- Paella Rice, 5-239, 241
- Paella Stock, 5-239, 240
- Paella Valenciana plated-dish recipe, 5-239–245
- Pain d'Épices Powder, 5-17, 22
- pale soft exudate (PSE), adrenaline and, 3-34
- palm oil, chemistry of, 2-126
- palm olein oil, chemistry of, 2-126
- Palmer, Charlie, New International cuisine and, 1-30
- palmitic acid, 1-233
- pan scrapings, 2-343
- pancreas, 5-32. *See also* sweetbreads
 - characteristics and cooking of, 3-140
- paneer, parametric recipe for, 4-104
- panfrying. *See also* griddles; shallow frying
 - basting and, physics of, 2-103
 - characteristics of, 2-37
 - after cooking sous vide, 2-275
 - flipping food in, 2-38–39
 - griddles for, 2-40–41
 - heat transfer by conduction in, 1-277
 - a la plancha, 2-36–43
 - pans and burner choices for, 2-41–43
- pans
 - for combi ovens, 2-166
 - dark-surfaced, radiant heat and, 2-38
 - frying, seasoning of, 2-53
 - for sautéing, 2-45
 - for searing a la plancha, 2-41–43
 - as vacuum containers, 2-226–227
- papacy, early gastronomy of, 1-10
- papain, 3-195
- papayas
 - Green Papaya Pickle, 5-97
 - preserving, parametric recipe for, 3-348
- paper pod systems, for espresso, technology of, 4-400
- paper towels, disposable, kitchen hygiene and, 1-200
- papers
 - dehydrating formula for, 3-367
 - Seafood Paper, 3-188
 - Spinach Paper, 3-369
- Papin, Denis, pressurized boiler of, 2-76
- paprika infusion, parametric recipe for, 2-310
- Paracelsus, 3-160
- Paradoxurus hermaphroditus*, Kopi Luwak coffee and, 4-360
- paragonimiasis, 1-124
- parametric recipes
 - for acidifiers, 2-314–315
 - for batter-frying, 3-332–333
 - for blended egg gels, 4-92
 - for breading, 3-338–339
 - for brines, cures, and dry rubs, 3-168–172
 - for broth, 2-304–305
 - for cellulose gum gels, 4-170–171
 - for coarse-ground sausages, 3-236–237
 - for cold gels, 4-140–141
 - for compressed and impregnated fruits and vegetables, 3-390–391
 - for compressed fruits and vegetables, 3-390–391
 - for consommé, 2-374–375
 - for cooked whole eggs, 4-78–79
 - for custards, 4-84
 - for dehydrated fruits and vegetables, 3-366–367
 - for edible films, 4-60
 - for emulsion-style sausages, 3-238–239
 - for extracting flavor with alcohol, 2-326
 - for fermented sausage, 3-244–245
 - for fish and shellfish sous vide, 3-102–103
 - for flavor infusion into fats, 2-328–329
 - for flavor-infused liquids, 2-310
 - for fluid gels, 4-177–179
 - for freeze-dried fruits and vegetables, 3-372
 - for freeze-drying, 2-450–452
 - for froths, airs, and bubbles, 4-264
 - for fruit and vegetable chips, 3-328–329
 - for fruit purees, 2-424–425
 - for fruits sous vide, 3-288, 290–291
 - for hamburgers, 3-234–235
 - for heat-treated fruit, 3-359
 - for hot- and cold-smoked meats and seafood, 3-210
 - for hot fruit and vegetable gels, 4-164–165
 - for hot gels, 4-160–161
 - for impregnated fruits and vegetables, 3-390–391
 - for jus, 2-344–345
 - for light foams, 4-270
 - for microwaved vegetables, 3-311
 - for milks and creams, 4-56
 - for modern starch thickeners, 4-30
 - in *Modernist Cuisine*, 1-97–98
 - for offal sous vide, 3-146
 - for pasta, 3-380–381
 - for potato purees, 3-296–297
 - for preserved and pickled eggs, 4-82
 - for protein curds, 4-104
 - for puffed snacks, 4-302
 - for risottos, 3-304–305
 - for salting, pickling, and fermenting, 3-348–349
 - for separated egg gels, 4-85
 - for set foams, 4-288–289
 - for smoked eggs and dairy products, 4-100
- parametric recipes (*continued*)
 - for smoked plant foods, 3-362
 - for spherification, 4-186–187
 - for stocks, 2-296–298
 - for tender meats sous vide, 3-96
 - for tender poultry sous vide, 3-99
 - for thick foams, 4-278–279
 - for thickened hot and cold liquids, 4-46–47
 - for tough meats, poultry, and shellfish, 3-108–109
 - for traditional starch thickeners, 4-28
 - for transglutaminase gels, 4-116
 - for vegetable purees, 2-424–425
 - for vegetables sous vide, 3-288, 289–290, 292
- parasitic worms, 1-120–125
 - flesh contamination and, 1-117
 - flukes as, 1-120, 123–124
 - foodborne illnesses in U.S. and, 1-111, 113
 - as foodborne pathogens, 1-108
 - roundworms as, 1-120–123
 - tapeworms as, 1-124–125
- parathas, about, 5-92
- Parker, Robert M., Jr.
 - aroma sensitivity of, 4-348
 - on Ashenfelder's Bordeaux Equation, 4-328
 - biography of, 4-330
 - wine ratings by, 4-338, 340
 - on wine taste, 4-332
- Parkerization, 4-330
- Parmesan cheese
 - Frozen White "Truffle," 3-400–401
 - infusion of, parametric recipe for, 2-310
 - Parmesan Crème Brûlée, 4-88
 - Parmesan Nuggets, 4-35
 - Parmesan "Polenta," 4-181
 - Two-Meter Parmesan Spaghetti, 4-143
- Parmesan water, parametric recipe for, 2-374–375
- Parmigiano Reggiano cheese, Warm Potato and Pistachio Pesto Salad, 4-53
- Parnell, Thomas, 4-9
- parsley
 - Microwave-Fried Parsley, 3-312
 - Microwave-Fried Parsley and Carrot Tops, 5-49, 53
 - Parsley Foam, 5-229, 231
 - puree of, parametric recipe for, 2-425
- Parsley Foam, 5-229, 231
- parsnips
 - natural toxins of, 1-249
 - puree of, parametric recipe for, 2-425
- Root Vegetable Jus, 5-161, 163
- particle size reduction, 2-398–427
 - dry grinding and, 2-401–406
 - equations on energy to reduce, 2-401
 - equipment for, 2-398–427
 - pacotizing and, 2-406–411
 - strategies for reducing, 2-400–401
 - wet-grinding and, 2-412–427
- particles
 - size of
 - mouthfeel and, 4-10
 - reducing. *See* particle size reduction
 - for thickening, 4-7, 12, 19
- partridge, as substitute for pigeon, 5-132

- Pascal seconds, as viscosity measure, 4-6
- Paskach, Thomas, 1-62–63
- Passard, Alain
L'Arpège egg of, 5-211
Onion Gratin recipe, 5-261, 265
Scallop Tartare recipe, 3-67
Smoked Potatoes with Vin Jaune Sabayon recipe, 3-363
- passion fruit
dehydrating, parametric recipe for, 3-366
Passion Fruit Brown Butter Fluid Gel, 5-181, 182
Passion Fruit Granita, 5-175, 177
Passion Fruit Jelly, 4-180
Passion Fruit Marshmallow with Chorizo Powder, 4-290
Passion Fruit-White Soy Sauce Vinaigrette, 5-181, 183
- pasta, 3-378–388
Chinese, Italians and, 1-14
Cocoa Tajarin, 5-225, 227
doughs, best bets for, 3-381
example recipes for, 3-382–387, 5-253
freeze-drying, parametric recipe for, 2-451
ingredients and process for, 3-378
Mac and Cheese, 3-387
milled grains for, 3-376
Pad Thai, 3-385
parametric recipe for, 3-380–381
Pasta Marinara, 3-386
Ramen Noodles, 5-247, 250
smoking of, 3-361
parametric recipe for, 3-362
Sour Cream Spaetzle (Csipetke), 4-117, 5-55, 59
Two-Meter Parmesan Spaghetti, 4-143
wheat, puffed, parametric recipe for, 4-302
- Pasta Marinara, 3-386
- Pasteur, Louis, 1-148, 2-75, 84–85, 250
- pasteurization
drying with warm air and, 2-432–433
of eggs, 1-191, 4-74
FDA Food Code on, 1-185, 187, 188–189
for heat-sanitizing food, 1-148–149
holding at specific temperature for, 2-243
of ice cream bases, 1-206
refrigerated shelf-life for vacuum-packed foods after, 2-257
of sausage, 3-233
simplified cooking standards for, 1-190, 191, 192, 194
for storage, terminology for, 2-249–250
- pasteurized eggs, parametric recipe for cooking, 4-78
- pastis effect, science of, 4-211
- pastrami, Beef Cheek Pastrami, 3-213
- pastry chefs, innovations of, 1-73
- pâte, Guinness “Pâte de Fruit,” 4-145
- Pâte à Choux, 5-151, 152
- Patent and Trademark Office, 1-71
- patent law, food ingredients and techniques and, 1-70, 71–72
- Pathogen Modeling Program (PMP), 1-147
- pathogens. *See also* bacteria; foodborne illnesses; viruses
endemic, 1-110
microorganisms as, 1-106–109
- Patterson, Daniel
on essential oils, 2-322
Grapefruit and Black Pepper recipe, 4-276
Modernist cuisine and, 1-67
poached scrambled eggs by, 4-93
- pavé
Skate Pavé with Bread Crust, 5-157, 159
Sous Vide Duck Confit Pavé, 5-81, 82
Sous Vide Monkfish Pavé, 5-151, 155
- Pavoni, Desiderio, 4-372
- Pea Vine Salad, 5-273, 275
- peas. *See* black-eyed peas; chickpeas; green peas
- peaches
compressing, parametric recipe for, 3-390
cooking sous vide, parametric recipe for, 3-288
impregnating, parametric recipe for, 3-390
Lemon Verbena and Peach Froth, 4-273
preserving, parametric recipe for, 3-348
- peanut butter
Peanut “Tofu,” 4-122
Salmonella-contaminated, 1-180, 195
- peanut oil, chemistry of, 2-126
- peanuts
allergies to, 1-238
Crispy Boiled Peanuts, 3-303
- pears
compressing, parametric recipe for, 3-390
cooking sous vide, parametric recipe for, 3-288, 290
dehydrating, parametric recipe for, 3-366
heat-treating, parametric recipe for, 3-359
impregnating, parametric recipe for, 3-390
Preserved Pear in Mustard Oil, 5-281, 283
preserving, parametric recipe for, 3-348
- pecans, smoking, parametric recipe for, 3-362
- pecorino cheese, Pecorino with Truffle Honey on Cedar, 4-101
- Pecorino Romano cheese, Poached Apple with Pecorino Foam, 4-276
- pectin
drying plant foods with, 3-365
as gelling agent, 4-68
with heat, for thickening, 4-7
hydrogen bonds in water and, 1-296
natural sources for, 1-253, 257
as vegetable glue, 3-392
- pectin methylesterase (PME), 3-280
- pectinase
juicing fruits with, 2-335
juicing plant foods with, 2-336
Pectinase-Steeped Fries, 3-324
- Pekin duck, roasting, 2-33
- Peking Duck
skin crisping by loosening from, 3-123
traditional cooking of, 3-119, 122
- pellicle, formed by smoking, 2-141, 3-211
- Pen Shell Clam, Pluot, Myoga, Scallop Mochi, 5-197, 202
- penetrating meat tenderizers, hazards with, 1-176
- pepperoni
Fast-Cured Pepperoni, 3-247
parametric recipe for, 3-244–245
- peptides, in freshly slaughtered meat, 3-34
- percolation, for coffee brewing, 4-364
- perimysium, 3-6
- peristaltic pumps, extruding gel noodles with, 4-139
- Perlage Champagne preservation system, 4-347
- Perlini carbonation system, 4-347
- Persian cucumbers, Nukazuke, 3-354
- persimmons
cooking sous vide, parametric recipe for, 3-288
dehydrating, parametric recipe for, 3-366
Hachiya variety, unripe phase of, 3-262
- persistent diarrhea, 1-114
- personal hygiene
chef's accessories for, 1-202–203
food safety and, 1-196–200
- Peschardt, William Julius Syplie, 1-39
- pesticides, 1-245, 252–253
- Petrini, Carl, 1-23
- pH. *See also* acidifiers; acidity of food; acids or acidic compounds; pickling
acidic marinades and, 3-192–193
bacterial replication rates and, 1-143, 144
boiling-water sterilizing of canned foods and, 2-81
Clostridium botulinum and, 1-139
canning method and, 2-76
in century eggs, 4-83
chemistry of, 3-194
color and texture of cooking plant foods and, 3-274–275
of espresso, hard water and, 4-384
in fermented sausage, 3-246
gel selection and, 4-73
juice extraction and, 2-239
lowering, for food preservation, 3-344
Maillard reaction and, 3-91
marinades and, 3-190
measuring of, 2-316
in muscle after slaughter, 3-32, 34–35
pressure-canning and, 2-85
sodium citrate as sequestrant and, 4-125
thickeners and, 4-15, 16
truite au bleu and, 3-40
- phase changes
in emulsions, 4-199, 203, 206
thermal energy from, 1-290
of water, energy of, 1-300–303
- phase diagrams, of water, how to read, 1-302–303
- phase inversion, 4-206
- pheasant, cooking sous vide, parametric recipe for, 3-99
- Phelan, Robert, 4-246
- phenolic acids, olive oil and, 1-232, 234
- phenols, smoked food and, 2-134, 3-211
- pheophytin pigments, in green vegetables, 2-267
- Philosophers at Dinner* (Athenaeus), 1-12
- pho broth
Oxtail Pho Broth, 2-307
parametric recipe for, 2-304–305
- Phocanema decipens*, 1-122–123
- phosphate brine, basic, parametric recipe for, 3-168
- phosphates
for accelerating brining, 3-158
for brining or curing, 3-157
- phospholipids, as surfactant emulsifiers, 4-216–217
- photographs
credit for, 1-101
of cutaways, 1-88–89. *See also* cutaway illustrations
equipment for, 1-89
Myhrvold on use of, 1-84–85
- Phylloxera*, 4-327
- Physiologie du Goût* (Brillat-Savarin, 1825), 1-9
- Pic, Jacques, 1-34
- pickle chips, parametric recipe for, 3-328
- pickled eggs, parametric recipe for, 4-82
- pickles
Compressed Dill Pickled Vegetables, 5-55, 58
fermented, parametric recipe for, 3-349
Fried Pickles, 5-67, 75
Green Papaya Pickle, 5-97
parametric recipe for, 3-349
Pickled Bing Cherry, 5-267, 268
Pickled Butternut Squash, 5-60, 64
Pickled Celery Root, 5-126, 133
Pickled Figs, 5-135, 137
Pickled Garlic, 5-25, 26
Pickled Jerusalem Artichokes, 5-125, 131
Pickled Lemon, 5-273, 275
Pickled Quail Eggs, 4-83
Pickled Ramps, 5-113, 118
Pickled Tapioca Pearl, 5-205, 207
salt, parametric recipe for, 3-349
sour vinegar, parametric recipe for, 3-349
Sous Vide Cucumber Pickles, 3-353
sweet vinegar, parametric recipe for, 3-349
- pickling
boiling-water canning for, 2-82–83
of eggs, best bets for, 4-82
example recipes for, 3-353, 5-25, 135
formulas for, 3-349
parametric recipe for, 3-348–349
of plant foods, 3-344, 346, 348
- PID (proportional-integral-derivative) controllers
characteristics of, 1-270
God shots and, 4-375
invention of, 4-398
for kitchen appliances, 1-271
programmable, 2-238
for smoking, 3-208

- PID (proportional-integral-derivative) controllers (*continued*)
 for sous vide cooking, 2-233, 240
 types and characteristics of, 2-230–231
- Piège, Jean-François
 Spaghetti Carbonara recipe, 3-384
 Steamed Blancmange recipe, 4-296
- pig, suckling
 cooking sous vide, parametric recipe for, 3-96, 109
 Suckling Pig Shoulder with Shallot and Orange Sauce, 3-110
- pig-bel, *C. perfringens*-contaminated food and, 1-141
- pigeon
 cooking sous vide, parametric recipe for, 3-99, 108
 Farce Royale, 5-126, 132
 Pigeon en Salmis plated-dish recipe, 5-125–133
 Pigeon with Shellfish Butter, 3-100
 Roast Pigeon Crown, 5-126, 132
 Toasted Oat Jus, 5-126, 133
- pigeon offal, Sous Vide Pigeon Offal, 5-125, 130
- pigeon stock, parametric recipe for, 2-296–298
- pig's blood, Hot Blood Pudding Custard, 4-221
- pilaf, Candied Orange and Carrot Pulao, 5-94
- pin bones, in fish, 3-22
- pin-and-disc mills, 2-404
- pine bud infusion, parametric recipe for, 2-310
- pine nuts
 Braised Pine Nuts with Winter Squash, 5-60, 65
 Frozen Crème-Frâche and Pine-Nut Cream, 2-411
 Romesco Sauce, 2-419
 Shaved Foie Gras, 3-177
 smoking, parametric recipe for, 3-362
- pineapple
 compressing, parametric recipe for, 3-390
 cooking sous vide, parametric recipe for, 3-288
 dehydrating, parametric recipe for, 3-366
 impregnating, parametric recipe for, 3-390
 Pineapple Glass, 3-370
 preserving, parametric recipe for, 3-348
 smoking, parametric recipe for, 3-362
- pineapple chips, parametric recipe for, 3-328
- pinecones, green, Adrià's use of immature pine nuts from, 1-36
- pink brine, basic, parametric recipe for, 3-168
- Pink Grapefruit Confit, 5-225, 226
- pink salt rub, parametric recipe for, 3-169
- pink salts, nitrates or nitrites in, 3-165
- Pinot Noir, Chardonnay and, 4-327
- piquillo peppers, 5-279
 freeze-drying, parametric recipe for, 3-372
 Piquillo Pepper and Strawberry Salad, 5-277, 278
- Pistachio Consommé, 2-376
 pistachio cream for gelato, 4-214
 Pistachio Gelato, 4-236
 pistachio oil, Pistachio Gelato, 4-236
 Pistachio Puree, 2-427
- pistachios
 Microwaved Pistachio Sponge Cake, 4-294
 Pistachio Consommé, 2-376
 Pistachio Gelato, 4-236
 Pistachio Puree, 2-427
 Warm Potato and Pistachio Pesto Salad, 4-53
- pit, barbecue, origins of, 3-208
- pit boss, use of term, 3-208
- pita bread, water as foaming gas for, 4-254
- pitch, extreme viscosity of, 4-9
- pitchers, spouted, for pouring lattes, 4-391–392
- plancha. *See also* griddles; panfrying
 for Modernist kitchen, 2-287
 searing using, 2-40–41
 of frozen meat, 3-122
 for sous vide cooking, 2-271
- plant foods, 3-258–401
 cooking
 benefits of, 3-267
 color changes in, chemistry of, 3-274–275
 frying and, 3-314–343
 methods for, 3-273
 microwaving and, 3-310–313
 pressure-cooking and, 3-298–309
 sous vide, 3-286–297
 culinary deception with, 3-388–401
 dehydrating, 3-365–373
 enzymes in, 3-282–284
 fat content of, 5-XLIII
 FDA Food Code time and temperature for, 1-184
 freeze-drying, critical temperature for, 2-446
 fruits as. *See* fruits; *specific fruits*
Le Gargouillou with, 1-20, 3-294–295
 heat-shocking, 3-358–359
 internationalization of, history of, 3-268
 juices from
 browning of, 2-338
 filtering, 2-354
 juicing with pectinase enzymes, 2-336
 milling, 3-376–377
 nuts as. *See* nuts
 preserving, 3-344–373
 properties of, 3-262–285
 raw
 digesting, biology of, 3-269
 FDA rules and, 1-182
 seeds as. *See* seeds
 smoked, 2-141
 best bets for, 3-362
 smoking, 3-361–363
 softening by holding at specific temperature, 2-247–248
 starches in, 3-280–283
 textures of, modifying, 3-374–401
 types of, 3-264
 vacuum compression and, 2-213
 vegetables as. *See* vegetables; *specific vegetables*
 water content of, 3-273
- plants, 3-266. *See also specific plants*
 composition of, physics of, 3-266
 defenses of, defeating, 3-267, 273
 as food. *See* plant foods; *specific plant foods*
 gelling agents from, 4-126
 hydrocolloids from, as thickeners, 4-19
 seeds of. *See* seeds
 self-defense by, toxicity of, 3-266
 plasma, as charged gas, 1-301
 plasmids, 1-109, 133
Plasmodium, 1-126
 plasmolysis, cell dehydration and, 1-305
 Plassman, Hilke, 4-340
- plastic packaging
 for edge sealers, 2-222
 for impulse sealers, 2-225
 molding sausage with, 3-241
 selection of, 2-210–211
 sous vide cooking and, 2-207
- plastic wrap
 molding sausage with, 3-241
 vacuum packing and, 2-212
- plate freezers, uses for, 1-307
- Plateau, Joseph, 4-246
- plated dishes
 Blumenthal on, 1-51
 elements of recipes for, 1-99
 invention of, 1-25
 Nouvelle cuisine and, 1-26
 recipes in *Modernist Cuisine* for, 1-97–100
 styles of, 1-98
 styles of recipes for, 1-100
- plated-dish recipes for eggs, 5-209–221
 The Breakfast Egg, 5-211–213
 Mushroom Omelet, 5-215–217
 Oeufs en Meurette, 5-219–221
- plated-dish recipes for fish, 5-141–177
 Black Cod “Frédry Girardet,” 5-170–173
 Fish and Chips, 5-143–145
 Hamachi Maitaise, 5-147–149
 Hawaiian Poke, 5-175–177
 Malaysian Steamed Snapper, 5-167–169
 Monkfish with Mediterranean Flavors, 5-151–155
 Salmon Rus, 5-161–165
 Skate in Black Butter, 5-157–159
- plated-dish recipes for fruits and vegetables, 5-259–287
 Crispy Cauliflower, 5-281–283
 Lentil Salad, 5-267–271
 Onion Tart, 5-261–265
 Strawberry Gazpacho, 5-277–279
 Sweet Pea Fricassee, 5-272–275
 Watermelon Bulgogi, 5-285–287
- plated-dish recipes for poultry, 5-107–139
 Crispy Hay-Smoked Chicken, 5-113–119
 Duck Apicius, 5-121–123
 Foie Gras à la Vapeur, 5-109–111
 Guinea Hen Tagine, 5-135–139
 Pigeon en Salmis, 5-125–133
- plated-dish recipes for shellfish, 5-179–207
 Lobster Américaine, 5-184–187
 Oyster Stew, 5-205–207
 Pulpo a la Orecia, 5-193–195
 Shellfish Omakase, 5-197–203
- plated-dish recipes for shellfish (*continued*)
 Shrimp Cocktail, 5-180–183
 Thai Crab Miang, 5-189–191
- plated-dish recipes for starches, 5-223–256
 Astronaut Ramen, 5-247–251
 Cocoa Tajarin, 5-225–227
 Paella Valenciana, 5-239–245
 Russian Pelmeni, 5-233–237
 Shanghai Soup Dumplings, 5-253–256
 Spaghetti alle Vongole, 5-229–231
- plated-dish recipes for tender cuts, 5-3–39
 Autumn Harvest Pork Roast, 5-17–23
 Beef Rib Steak, 5-5–9
 Blanquette de Veau, 5-31–33
 Choucroute Royale, 5-35–39
 Mushroom Swiss Burger, 5-11–15
 Rack of Lamb with Garlic, 5-25–29
- plated-dish recipes for tough cuts, 5-41–105
 American BBQ, 5-66–79
 Braised Short Ribs, 5-42–47
 Cassoulet Toulousain (Autumn), 5-81–84
 Cassoulet Toulousain (Spring), 5-85–87
 Historic Lamb Curries, 5-89–99
 Hungarian Beef Goulash, 5-55–59
 Osso Bucco Milanese, 5-60–65
 Pot-au-Feu, 5-49–53
 Sunday Pork Belly, 5-101–105
- platinum RTD (resistance temperature diode), 1-207
- Pliny the Elder, 2-396
- plums
 compressing, parametric recipe for, 3-390
 cooking sous vide, parametric recipe for, 3-288
 impregnating, parametric recipe for, 3-390
 in Pen Shell Clam, Pluot, Myoga, Scallop Mochi, 5-197, 202
- pluots
 about, 5-202
 Pen Shell Clam, Pluot, Myoga, Scallop Mochi, 5-197, 202
- PME (pectin methylesterase), 3-280
- PMP (Pathogen Modeling Program), 1-147
- poach test
 of sausage binding power, 3-223
 technique of, 3-225
- Poached Apple with Pecorino Foam, 4-276
- “Poached” Egg, 4-195
- Poached Lamb Loin, 5-85, 87
- Poached Lobster, 4-219
- Poached Lobster Tail, 5-185, 187
- Poached Oysters, 5-233, 236
- poaching
 cryopoaching as
 Cryopoached Dill Meringue, 5-161, 165
 Cryopoached Green Tea Sour, 4-291
 for Dippin’ Dots, 1-61
 technique for, 2-460
 of eggs, stirring pot before, physics of, 2-67

- poaching (*continued*)
 Girardet method for broiling and, 2-24–25, 96, 97
- pod systems, for espresso, technology of, 4-400
- Poggioli, Renato, 1-18
- Point, Fernand
 on glazing vegetables, 2-58
 Nouvelle cuisine and, 1-24
 Poulet au Feu d'Enfer recipe, 3-100
- polar solvents, 1-330
- polarity, of water molecules, 2-182, 4-199
- Polcyn, Brian, Blackstrap Molasses Country Ham recipe, 3-183
- polenta
 Almond Polenta, 4-36
 Parmesan “Polenta,” 4-181
 Pressure-Cooked Polenta with Strawberry Marinara, 4-50
- political interest groups, food safety rules and, 1-170
- “The (Political) Science of Salt” (Taubes), 1-236
- Pollan, Michael
 on eating our great-grandmothers' food, 1-15
 on Slow Food, 1-23
- Polo, Marco, pasta and, 1-14
- Polyclar fining, 2-352, 360
- polycyclic aromatic hydrocarbons, smoked food and, 2-143
- polyethylene, for rescuing corked wine, 4-349
- polyglycerol esters, as surfactant emulsifiers, 4-216–217
- polymer molecules, for gelling or thickening, 4-71
- Polyp Prevention Trial, 1-215, 217, 233
- polyphenol oxidase (PPO)
 blanching and, 2-267
 fruit blemishes and, 3-282–283
 plant juice browning and, 2-338
- polyphosphates. *See* sodium tripolyphosphate
- polysaccharides
 hydrocolloids as, 4-124
 starches as, 4-20
- polysorbates, as surfactant emulsifiers, 4-216–217
- polyunsaturated fat, 1-222
- polyvinyl chloride (PVC) plastics, food safety and, 2-207, 3-241
- polyvinylpyrrolidone (PVPP), as fining agent, 2-360
- pomegranate
 juicing seeds of, 5-122
 Pomegranate and Garum Jus, 5-121, 122
- pomelo, Frozen Pomelo Cells, 5-189, 191
- Pommes Pont-Neuf, 3-323
- pommes soufflées
 Pommes Soufflées, 4-306, 5-143, 145
 water as foaming gas for, 4-254
- ponzu, Sous Vide Ponzu, 2-313
- popcorn
 Crispy Corn Pudding, 5-101, 104
 microwave, 2-183
 Popcorn Pudding, 4-181
- Popeil, Ron, 2-34
- porcini mushrooms
 cooking sous vide, parametric recipe for, 3-289
 Mushroom Puree, 5-215, 216
 Rib Eye with Cherry Mustard Marmalade and Porcini, 3-97
- pork. *See also* bacon; ham; hogs;
 prosciutto; suckling pig
 aging, 3-41
 Alsatian Munster Sausage, 5-35, 39
 brining, parametric recipe for, 3-172
 Coarse Fat-Gel Sausage, 3-248
 cold-smoking, parametric recipe for, 3-210
 cooked, pink color in, 3-94
 cooking
 cooking times for, 1-121, 179, 180
 sous vide, parametric recipe for, 3-96, 109
 Crab and Pork Stock Spheres, 5-253, 256
 cultural recommendations on
 cooking, 1-165, 170–171
 curing, parametric recipe for, 3-172
 Fast-Cured Pepperoni, 3-247
 fast-twitch vs. slow-twitch muscle in, 3-12, 13
 FDA safe cooking standards for, 1-170
 food safety misconceptions about, 1-179–180
 free-range, safety debate on, 1-179
 Freeze-Dried Pork, 5-247, 251
 freeze-drying, parametric recipe for, 2-451
 Green Garlic and Pork Sausage, 5-85, 86
 hot-smoking, parametric recipe for, 3-210
 House-Cured Bacon, 3-182, 5-17, 18
 Italian Sausage, 3-242
 Pork Loin Roast, 5-17, 23
 Pork Ribs, 5-67, 78
 Pork Tenderloin with Juniper, 5-35, 36
 Pressure-Cooked Carnitas, 3-114
 primal cuts of, 3-44
 Pulled Pork Shoulder, 5-67, 78
 reattaching skin as breading after cooking, 3-122–123
 red meat in, 3-14, 15
 roast, how to puff skin on, 3-126–127
 safe cooking temperature for, 1-121–122
 Saucisson Sec, 3-247
 as sausage binder, 3-222
 for sausage-making, cuts for, 3-222
 shoulder, dissecting, 3-48–49
 skin contraction during cooking of, 3-118
 Smoked Pork Cheek, 5-35, 38
 Sous Vide Pork Belly, 5-101, 102
 tapeworms and, 1-124
 tenderizing enzymes in, 3-78
 Toulousain Garlic Sausage, 5-81, 82
Trichinella and, 1-117–118, 120
 Triple Dungeness Crab and Pork Stock Infusion, 5-253, 254
 pork and Banyuls roasting jus, parametric recipe for, 2-344–345
 pork belly, sous vide tenderizing of, 3-83
- pork fatback
 Coarse Fat-Gel Sausage, 3-248
 Fast-Cured Pepperoni, 3-247
 Italian Sausage, 3-242
 Saucisson Sec, 3-247
- pork lard, chemistry of, 2-126
- pork rinds, puffed, making of, 3-129
- pork stock, parametric recipe for, 2-296–297
- Pork Trotter Beignet, 5-35, 38
- portafilters, espresso
 crotchless
 advantages of, 4-385, 388
 invention of, 4-398
 dosing, 4-378, 380
 grooming. *See* grooming espresso
 portafilters
 tamping, 4-380, 383–384
 how to, 4-382
- portafilters, nanoscale, 2-357
- portions. *See also* food size
 single, Pacojets for, 2-407, 410
 vacuum-sealed individual, 2-199, 201
- Portuguese Cork Association, 4-348
- posset, parametric recipe for, 4-104
- Le Postay, 1-70
- Postmodern cuisine, Modernist cuisine vs., 1-57
- potassium
 hypertension and, 1-236
 as ion-based coagulant, 4-126
- potassium nitrate
 for dry-curing, 3-165
 for food preservation, 1-144–145
 in sel rose (curing salt), 3-162
- potato chips
 homemade, 3-329–330
 parametric recipe for, 3-328
 Pringles, history of, 3-330
- potato starch, thickening with, parametric recipe for, 4-28
- potatoes
 Artichoke and Potato Chaat, 3-313
 Baked Potato Broth, 2-309
 Baked Potato Foam, 4-281, 5-193
 boiled, sugar and, 3-276
 Clay Potatoes, 3-398
 cooking sous vide, parametric recipe for, 3-290, 292
 Duck Leg Confit with Pommes Sarladaises, 3-178
 flour milled from, 3-376
 floury vs. waxy, gelatinization of, 3-280
 frying, 3-322–325
 mashed
 of Robuchon, 1-37, 58
 of Steingarten, 1-65
 natural toxins of, 1-249
 Pectinase-Steeped Fries, 3-324
 Pommes Pont-Neuf, 3-323
 Pommes Soufflées, 4-306, 5-143, 145
 Potato Beignets with Caviar, 4-174
 Potato Puree, 3-296, 5-5, 8
 Potato Salad, 5-67, 73
 puffed, parametric recipe for, 4-302
 purees of
 best bets for, 3-297
 parametric recipe for, 2-425, 3-296–297
 Potato Puree, 3-296, 5-5, 8
 Restructured Potato Chips, 3-330
 Root Vegetable Risotto, 3-309
- potatoes (*continued*)
 Smoked Potato Confit, 5-193, 195
 Smoked Potatoes with Vin Jaune Sabayon, 3-363
 smoking, parametric recipe for, 3-362
 starch granules of, 4-20
 Starch-Infused Fries, 3-324
 Starch-Infused Ultrasonic Fries, 3-325
 thickening with, 4-28
 toxins in, 3-262
 Ultrasonic Fries, 3-325, 5-11
 volumetric equivalents for amounts of, 5-XLV
 Warm Potato and Pistachio Pesto Salad, 4-53
- pot-au-feu
 parametric recipe for, 2-304–305
 Pot au Feu Consommé, 5-49, 52
 Pot-au-Feu plated-dish recipe, 5-49–53
- pot-roasting, 2-93–96
 braising or stewing vs., 2-93
 chemistry of aging and, 2-98
 cutaway illustration of, 2-94–95
 of meat, how to, 2-99
 traditional method for, 2-93, 96
- pots, on stove
 heat loss and, 1-276
 immersion circulators for, 2-234
 for sous vide cooking, 2-233, 240
- Poulet au Feu d'Enfer, 3-100
- poultry. *See also specific types of poultry*
 cooking
 ideal temperature for, 3-89
 simplified standards for, 1-190, 193
 diet and flesh color of, 3-93
 FDA Food Code on *Salmonella* in, 1-175
 FDA Food Code time and temperature for, 1-187–188
 FSIS on *Salmonella* reduction in, 1-168
 plated-dish recipes for, 5-107–139
 red
 cooking sous vide, best bets for, 3-99
 tender, parametric recipe for cooking sous vide, 3-99
 safe cooking principles for, 1-191
 tanning properties of smoke and, 2-141
 tender red, parametric recipe for cooking sous vide, 3-99
 tender white, parametric recipe for cooking sous vide, 3-99
 tenderizing enzymes in, 3-78
 tough, cooking sous vide
 best bets for, 3-108
 parametric recipe for, 3-108
 white
 cooking sous vide, best bets for, 3-99
 tender, parametric recipe for cooking sous vide, 3-99
- poultry liver, cooking sous vide, parametric recipe for, 3-146
- pounding meat, 3-50
- pour-over coffee brewer, 4-369

P

POWDERS

- powders
 cryogenic freezing of, 2-461
 cryopowdering and, how to, 2-461
 espresso, instant, 4-371
 pacotizing, 2-406–409
 spray-dried, 2-438–441
- power
 converting energy units and, 1-273
 units of, 1-272–273
- PPO (polyphenol oxidase)
 blanching and, 2-267
 fruit blemishes and, 3-282–283
 plant juice browning and, 2-338
- Prague Powders
 nitrates or nitrites in, 3-165
 No. 1
 for brining or curing, 3-158
 composition of, 3-161
 No. 2, composition of, 3-161
- Pralus, Georges, 1-41, 42
- Prats, Bruno, 4-328
- prawn crackers, water as foaming gas for, 4-254
- prawns. *See also* langoustines
 biology of, 3-28, 31
 cooking sous vide, parametric recipe for, 3-103
 Pigeon with Shellfish Butter, 3-100
 Puffed Crab Crackers, 5-189, 190
 in Seafood Paper, 3-188
 Shrimp and Grits, 3-377
 Shrimp Cocktail, 3-107
 Sous Vide Prawn Jus, 2-347
 Spot Prawn and Lotus Root Tempura with Smoked White Soy Sauce, 5-197, 201
 Spot Prawns with Foie Gras Nage, 4-233
 Steamed Live Spot Prawn, 5-181, 183
- precipitates, supersaturated solutions and, 1-332
- precooking, sous vide, for deep-frying, 2-123
- precursor molecules, in flavor reactions, enzymes and, 2-335, 338
- predator satiation (saturation), 3-284
- pregelatinized starch cracker, puffed, parametric recipe for, 4-302
- pregelatinized starch paste
 Pregelatinized Starch Paste, 4-29
 for thick foams, parametric recipe for, 4-278–279
- pregnancy, foodborne illnesses and, 1-127, 134
- preheating
 for baking, 2-102–103
 for deep-frying, 2-116
- preinfusion, in pulling an espresso shot, 4-384
- prepared foods, wide availability of, 1-22–23
- presentation, cognitive science of, 4-335
- preservatives. *See also* additives; food preservation
 chemical, bacterial growth and, 1-144–145
 fresh juice taste and color and, 2-238, 239
 popular perception of, 1-250
- Preserved Cinnamon Cap Mushroom, 5-219, 220
- preserved eggs, parametric recipe for, 4-82
- Preserved Lemons, 3-350, 5-135
- Preserved Pear in Mustard Oil, 5-281, 283
- preserves, seasonal mélanges with, 3-295
- preserving food. *See* food preservation
- pressing, example recipes for, 3-377
- pressure. *See also* pressure canners; pressure cookers; pressure filtration; pressure-canning; pressure-cooking
 plant foods
 atmospheric. *See* atmospheric pressure
 espresso-making and, 4-372, 374
 fineness of grind vs., in espresso machines, 4-378
 gauges and, atmospheric pressure and readings of, 2-86–87
 homogenizers and. *See* homogenizers, high-pressure; homogenizers, ultrahigh-pressure
 pressure fryers and, for Kentucky Fried Chicken, 2-120–121
 pressure steamers and, heat transfer in, 1-319
 pressure-marinating and, 3-198
 how to, 3-207
 pressure-shift freezing and, physics of, 1-309
 profiling, for espresso, 4-375
 technology of, 4-400
 solubility of gases in water and, 1-333, 4-256
 specific heat and, 1-266–267
 ultrahigh, to kill bacteria, 1-149
 vacuum, 2-391, 447
 vacuum packing and, 2-213, 215
 water, in espresso-making, 4-384
- pressure canners. *See also* pressure cookers
 cutaway illustration of, 2-90–91
 for extracting and infusing flavors, 2-251
 how to use, 2-89
 pressure cookers vs., 2-85–86
 for sous vide cooking, 2-233
 sterilization using, 2-250
 venting, 2-86–87, 291–292
- pressure cookers
 browning starch for roux with, 4-22
 collagen conversion into gelatin in, 3-79
 excess heat in, 2-291
 for Modernist kitchen, 2-286
 pressure canners vs., 2-85–86, 89
 for sous vide cooking, 2-233
 sterilization using, 2-250
 stock preparation with, 2-283, 291–294
 for tomato sauces, 3-276
 for tough cut cooking, 3-95
 venting
 before sealing, 2-291–292
 spring-loaded valves for, 2-86–87
- pressure filtration
 characteristics of, 2-352, 353–355, 358
 clarifying juice with, 2-355
 equipment for, 2-286
- pressure fryers, for Kentucky Fried Chicken, 2-120–121
- pressure gauges, atmospheric pressure and readings of, 2-86–87
- pressure steamers, heat transfer in, 1-319
- pressure-canning, 2-85–91
 acidity of food and, 2-76
 Chevalier-Appert on, 2-75
 cutaway illustration of, 2-90–91
 fine tuning, 2-88
 how air confounds, physics of, 2-87
 for low-acidity foods, 2-85
 pressure amount and duration for, 2-88
 reading gauge displays for, 2-86–87
 time to sterilization pressure using, 2-89
- Pressure-Cooked Carnitas, 3-114
- Pressure-Cooked Egg Toast, 4-97
- Pressure-Cooked Polenta with Strawberry Marinara, 4-50
- Pressure-Cooked Sesame Seeds, 3-303, 5-181
- Pressure-Cooked Tarbais Beans, 5-81, 83
- Pressure-Cooked Vegetable Risotto, 3-308
- Pressure-Cooked White Chicken Stock, 2-301
- pressure-cooking plant foods, 3-298–309
 best bets for, 3-300
- pressure-marinating, 3-198
 how to, 3-207
- pressure-shift freezing, physics of, 1-309
- pretenderized meat, hazards with, 1-176
- Prial, Frank, 4-331
- Priestley, Joseph, 2-464
- primal cuts, of meat, 3-44
- primary emulsion, 4-206
- Primitivo grape, Zinfandel and, 4-326
- Pringles, history of, 3-330
- “printed food,” 1-67, 69, 71
- prions
 diseases caused by, 1-156, 157–159, 160
 brain and, 1-156–157
 conformations of, 1-158
 politics and, 1-160–161
 in United States, 1-111
 as foodborne pathogens, 1-109
 names for, 1-112
- processed foods
 cheese as, history of, 4-222
 preservatives in, 1-144
- professional chefs. *See* chefs, professional; *individual chefs’ names*
- programmability
 in combi ovens, 2-168–169, 172–173
 of heating/chilling baths, 2-255
 of PID controllers, 2-230, 238
- progressive smoking, 2-148
- propane, for gas grills, 2-11
- proportional-integral-derivative controllers. *See* PID (proportional-integral-derivative) controllers
- propylene glycol alginate
 for edible films, parametric recipe for, 4-60
 as foam stabilizer, 4-257
 interactions with other thickeners, 4-44–45
 product guide for, 4-IV–V
 properties and uses of, 4-42–43
- propylene glycol esters, as surfactant emulsifiers, 4-216–217
- propylene glycol, thickening with, parametric recipe for, 4-46, 47
- prosciutto
 Chawanmushi, 4-96
 Ham Broth, 2-306
 infusion of, parametric recipe for, 2-310
 Prosciutto and Melon “Raw Egg,” 4-194
 slicing, 3-50
- prospective randomized, controlled clinical trials. *See* randomized clinical trials
- prospective studies
 definition of, 1-214
 of nutrition, 1-220
- protein coagulants, 4-103
- protein extracts, as sausage binders, 3-223
- proteins. *See also* dairy products; fatty acids; meats; *specific foods*
 conformation of, 1-156
 curds of
 best bets for, 4-104
 Cocoa Nib Curd, 4-105
 Fresh Cheese Curds, 4-106–107
 parametric recipe for, 4-104
 dehydrating foods and, 1-296
 in fish, 3-20
 as foaming agent, 4-244, 247
 folding of, 1-156
 frozen, aromatic compounds and, 2-261
 in gelatin, 4-67
 gelling agents from, 4-69
 with heat, for thickening, 4-7
 marinating and, 3-190
 in meat, 3-6
 nonmeat, fat incorporation into sausage with, 3-225
- proteolytic enzymes, 3-195
- protists, 1-126–129
 foodborne illnesses in U.S. and, 1-111
 as foodborne pathogens, 1-108
- Prudhomme, Paul, New American cuisine and, 1-28, 29
- prune coals
 carbon dioxide in sugar glass for, 4-254
 edible, how to make, 4-314–315
 Prune Coals recipe, 5-17
- Prusiner, Stanley, 1-156
- PSE (pale soft exudate), adrenaline and, 3-34
- Pseudoterranova decipiens*, 1-122–123
- psychrometric charts, how to read, 1-323
- PTW (Australian architectural firm), 4-246
- public health, food safety rules and, 1-169–170
- publication bias, nutritional studies and, 1-219
- Puck, Wolfgang
 food and restaurant empire of, 1-31
 New American cuisine and, 1-28, 29
 New International cuisine and, 1-30

pudding. *See also* blood sausage (pudding)
 Boudin Noir Bread Pudding, 5-125, 127
 Crispy Corn Pudding, 5-101, 104
 Jerusalem Artichoke Pudding, 4-31
 Popcorn Pudding, 4-181
 Puffed Chicken Feet, 3-133
 Puffed Chickpea Salad, 5-135, 138
 Puffed Chickpeas, 4-307
 Puffed Cockscomb, 3-133
 Puffed Crab Crackers, 5-189, 190
 puffed skin
 pork rinds and, making of, 3-129
 on pork roast, how to make, 3-126–127
 vicinal water and, 3-122, 123
 puffed snacks, 4-302–309
 best bets for, 4-302
 Cheese Puffs, 4-305
 example recipes for, 4-303–309, 5-197, 202
 parametric recipe for, 4-302
 Puffed Chickpeas, 4-307
 pulao, Candied Orange and Carrot Pulao, 5-94
 Pulled Mushroom, 3-396
 Pulled Pork Shoulder, 5-67, 78
 pulp, plant juice browning and, 2-338
 pulped natural process, for coffee, 4-358
 Pulpo a la Greca plated-dish recipe, 5-193–195
 pulses, flours milled from, 3-376
 pulverizing. *See also* grinding; milling
 mathematics of power to pulverize and, 2-401
 Pumpkinjack Winery, 4-345
 pumps
 aquarium
 foam forming with, 4-258, 260
 for sous vide cooking, 2-240–241
 vacuum. *See* vacuum pumps
 Pure-Cote B790
 for edible films, parametric recipe for, 4-60
 thickening with, 4-30
 parametric recipe for, 4-30
 pureeing
 colloid mills for, 2-398–399
 of colloidal suspensions from, 4-12
 meat, steps in, 3-231
 Pacojet for, 2-406–411
 strategies for, 2-400
 purees. *See also* pureeing
 Apricot and Jasmine Puree, 5-171, 173
 Avocado Puree, 5-205, 207
 Black Olive Puree, 4-230
 Broccoli and Hazelnut-Oil Puree, 2-426
 Confit Egg-Yolk Puree, 5-147, 148
 cooking fruits or vegetables sous vide for, 3-290
 cryofreezing and, 2-458
 Date Puree, 5-121, 122
 frozen, freeze-drying of, 2-446
 fruit
 best bets for, 2-425
 cooking sous vide, 3-290
 parametric recipe for, 2-425
 ground fruits or vegetables as, 3-376
 Milk Skin with Grilled Salsify and Truffle Puree, 4-114

purees (*continued*)
 Mushroom Puree, 5-215, 216
 Pistachio Puree, 2-427
 potato, best bets for, 3-297
 Potato Puree, 3-296, 5-5, 8
 Salted Caramel Apple Puree, 5-17, 20
 seasonal mélanges with, 3-295
 Smoked Pepper Puree, 5-55, 57
 Tamarind Puree, 5-281, 282
 vegetable
 best bets for, 2-425
 mechanics of, 3-279
 parametric recipe for, 2-424–425, 435
 sous vide cooking for, best bets for, 3-290
 purification, of toxins from the body, 1-248
 PVC (polyvinyl chloride) plastics, food safety and, 2-207, 3-241
 PVPP (polyvinylpyrrolidone), as fining agent, 2-360
 pyrolysis
 coffee roasting and, 4-362
 food safety and bitter taste from, 3-91
 overcooking and, 3-94
 of wood, 2-135, 137

Q

quail
 cooking sous vide, parametric recipe for, 3-99, 108
 Quail with Apple-Vinegar Emulsion and Water Chestnuts, 3-101
 quail eggs
 Chorizo French Toast, 4-98–99
 Pickled Quail Eggs, 4-83
 Quatre Épices, 2-403, 5-35, 125
 quiche filling, parametric recipe for, 4-92
 quinces
 cooking sous vide, parametric recipe for, 3-291
 Hot Quince Gel, 4-167, 5-121
 raw vs. cooked, 3-275
 quinoa
 Quinoa and Idiazábal with Bonito Stock Veil, 4-168
 Ragout of Grains, 5-125, 129
 quorum sensing, by bacteria, 1-134

R

rabbit
 cooking sous vide, parametric recipe for, 3-96, 109
 leg muscles of, 3-7
 Sous Vide Rabbit Loin, 5-239, 242
 wild, risks of eating, 1-138
 Rack of Lamb, 5-25, 29
 Rack of Lamb with Garlic plated-dish recipe, 5-25–29
 radiation (radiant heat)
 adding cream to coffee and, 1-289
 charcoal grills and, 2-10–11
 convection baking using, 2-110–111
 cooking food unevenly with, 3-314
 dark-surfaced pans and, 2-38
 fourth-power relationship to temperature of, 1-287
 heat transfer with, 1-277, 284–286
 hot spots in baking and, 2-112
 microwave ovens and, 2-182
 physics of shiny griddles and, 1-284
 roasting and, 2-28, 32–33
 sweet spot of grills and, 2-14–17
 radiation, ultraviolet. *See* ultraviolet radiation
 radishes
 Nukazuke, 3-354
 preserving, parametric recipe for, 3-348
 ragout of Grains, 5-125, 129
 raisins, Carbonated Golden Raisins, 5-157, 159
 Ramen Noodles, 5-247, 250
 Ramen Stock Powder, 2-455, 5-247
 Ramen Vegetables, 2-455, 5-247
 ramps
 Pickled Ramps, 5-113, 118
 Razor Clam with Sauce Verte, 3-112
 Ramsay, Gordon
 Modernist cuisine and, 1-63
 Nouvelle cuisine and individuality of, 1-28
 rancidity
 of freeze-dried meat, 2-447
 of frozen food, 1-306
 of reused deep-frying oil, 2-125
 of saturated vs. unsaturated oils, 2-126
 randomized clinical trials, 1-218
 of cholesterol-lowering drug and heart disease, 1-227
 of dietary fat and cancer, 1-233
 of dietary fat and heart disease, 1-229, 230–231
 of dietary fiber and colorectal cancer, 1-217
 of nutrition, 1-220
 of omega-3 fats and heart disease, 1-232
 of salt and hypertension, 1-234
 of vitamin supplements, 1-235
 of weight loss plans, 1-240, 241
 randomized intervention trials, 1-214
 Rankine temperature scale, 1-266
 Rao, Hayagreeva, 1-26
 rapeseed oil, chemistry of, 2-126
 rare beef jus, parametric recipe for, 2-344–345
 Rare Beef Sausage, 3-249

- Rare Flatiron Steak, 5-49, 50
 rare salmon jus, parametric recipe for, 2-344–345
 Ras el Hanout, 2-405
 raspberries
 dehydrating, parametric recipe for, 3-366
 freeze-drying, parametric recipe for, 3-372
 in Strawberry Gazpacho, 5-278
 ratings, for wines, 4-338–339
Ratio: The Simple Codes Behind the Craft of Everyday Cooking (Ruhlman), 1-95
 Rational combi ovens
 comparing cooking modes for, 2-169
 cooking strategies for, 2-170
 effective cooking temperatures in, 2-165
 heat and humidity control in, 2-163–165, 167
 invention of, 2-154
 program cooking with, 2-169
 testing heat and humidity control in, 2-156–157
 Rautureau, Thierry, Spot Prawns with Foie Gras Nage recipe, 4-233
 raw foods. *See also specific foods*
 diet of, 1-247–249
 FDA Food Code on, 1-182, 184
 flavors of, 3-87
 food safety disclaimer rules for, 1-178
 foodborne illness risks with, 1-191
 freezing
 FDA on time and temperature for, 1-186
 water types and, 1-305–306
 hygiene and, 1-196
 plants as, biology of digesting, 3-269
 tartares and meat as, 3-62–69
 example recipes for, 3-65–68
 water in, weight of, 3-79, 83
 raw milk cheese
 FDA safe cooking standards for, 1-170
 French vs. U.S. standards on, 1-171, 173
 Raw Okra, 5-90, 97
 raw packing, boiling-water canning and, 2-77
 Rayleigh scattering, 2-124, 4-203
 razor clams
 cooking sous vide, parametric recipe for, 3-103
 noroviruses and, 1-155
 Razor Clam “Takoyaki,” 5-197, 199
 Razor Clam with Sauce Verte, 3-112
 ready-to-eat food. *See also sous vide*
 marketing of, 2-265
 recall bias, nutritional studies and, 1-218
 recipes
 format for, 1-93, 96
 in *Modernist Cuisine*, 1-92–101
 credit for, 1-100–101
 types of, 1-97–100. *See also example recipe entries*; parametric recipe *entries*
 scaling, baker’s percentage for, 1-95–97
 red cabbage
 Red Coleslaw, 5-67, 72
 Red Wine Cabbage, 5-101, 105
 in Sauerkraut, 3-351, 5-35
 red cabbage (*continued*)
 Vacuum-Concentrated Apple and Cabbage Juice, 2-389
 red currants, as acidifier, 2-314
 Red Dye # 2, 1-252
 red flesh, in tuna, 3-21
 red hot, 1-287
 red kidney beans, natural toxins of, 1-249
 red meat. *See also specific meats*
 animals producing, 3-14–15
 breast cancer and, 1-221
 combi ovens vs. water bath cooking of, 2-167–168
 in ducks vs. chickens, 3-16–17
 poultry, sous vide cooking, best bets for, 3-99
 tenderizing enzymes in, 3-78
 in tuna, biology of, 3-21
 red pearl onions, Compressed Dill Pickled Vegetables, 5-55, 58, 67
 red wine
 Constructed Red Wine Glaze, 5-219, 221
 Red Wine Cabbage, 5-101, 105
 Red-Eye Gravy, 5-101, 102
 Red-Onion Cream, 3-68
 reductions
 for concentrating flavor, 2-379–380
 emulsifying butterfat in cream and, 4-205
 extracting flavors using stocks vs., 2-288
 flavor release by, 4-11
 modern, for thickening, 4-19
 scaling using baker’s percentages and, 1-96
 for thickening, 4-5, 7
 thickening by, various methods of, 4-11
 thickening sauces, jus, or glazes with, 2-346
 vacuum. *See vacuum reduction*
 Redzepi, René
 Edible Earth recipe, 4-37
 at elBulli, 1-39
 on *Le Gargouillou*, 3-294
 Milk Skin with Grilled Salsify and Truffle Puree recipe, 4-114
 Modernist cuisine and, 1-70
 reflectivity
 broilers and, 2-19, 22
 grills and, 2-15
 radiant heat and, 1-284–285
 refraction, index of, 4-203
 refrigeration. *See also chilling*
 of cold-smoked food, 2-143
 food preservation and, 2-252
 proper, importance of, 2-257
 sel rose as curing salt and, 3-162
 sous vide cooking and storage using, 2-206–207, 208
 of unfinished bottles of wine, 4-346
 refrigerators
 for cook-chill sous vide, 2-255
 temperature control in, 1-205–207
 thawing using, 2-263
 regional American cooking, 1-28
 regulations, U.S., on food safety, 1-165. *See also U.S. Food and Drug Administration*
 reheating
 of mass-market ready-to-eat foods, 2-265
 modern thickeners and, 4-5
 in sous vide cooking, 2-242, 262, 264
 thickener selection and, 4-15
 rehydration
 of freeze-dried foods, 2-447
 physics of dehydration and, 1-321
 relative humidity
 boiling point of water and, 2-163
 drying foods and, 2-428
 equilibrium, 2-430
 measuring, 1-322
 on psychrometric charts, how to read, 1-323
 water vapor and, 1-320–321, 325, 2-154
 relative risk, nutritional studies and, 1-219
 Rémyoulade Sauce, 5-67, 75
 Renaud, Serge, 1-228
 rendering
 bromelain for, 3-195
 cryorendering and
 of subcutaneous fat, 3-122
 before vacuum packing, 2-268
 of fat from meat tissue, 3-83
 methods for, 3-122
 strategies for, 3-145
 rennet, as gel coagulant, 4-70
 reserve bottling of wine, taste of ordinary wine bottling vs., 4-340
 reservoir chillers (water baths), 2-238
 restaurants. *See also Modernist cuisine; specific restaurants*
 food safety disclaimer rules for, 1-178
 Restaurant Apriori, 1-70
 Restaurant Hanner, 1-70
 Restaurant Calima, 1-57
 resting
 after brining, 3-156
 chilling and, 2-254
 myth of, baking and, 2-105
 panfrying and, 2-38
 reheated food, 2-264
 restrooms, personal hygiene and, 1-196
 Restructured Emmental Slices, 5-11, 14
 restructured meat
 meat glue and, 3-250–256
 sausage as. *See sausages*
 Restructured Potato Chips, 3-330
 resveratrol, heart disease and, 1-228
 retort bags, plastic/flexible
 for canning, 2-77
 heat transfer in, 1-319
 heating requirements and duration for, 2-79
 reverse osmosis (RO)
 concentrating flavor with, 2-379, 396
 food industry uses for, 1-335
 by kidneys, 3-141
 for purifying water, 1-335
 water for espresso-making and, 4-384
 wine and, 4-330
 reverse spherification, 4-184, 187, 5-254
 revolution
 cuisine and, 1-18–20
 cultural change and, 1-16–18
 at low end of cooking and eating, 1-20–22
 Nouvelle cuisine, 1-24, 26–31
 La Reynière (aka Robert Courtine), 1-26
 Reynolds, 4-6
 rhubarb
 as acidifier, 2-314
 compressing, parametric recipe for, 3-390
 cooking sous vide, parametric recipe for, 3-290
 impregnating, parametric recipe for, 3-390
 natural toxins of, 1-249
 preserving, parametric recipe for, 3-348
 Sour Rhubarb Sorbet, 5-277, 279
 rhubarb water, parametric recipe for, 2-374–375
 Rib Eye with Cherry Mustard Marmalade and Porcini, 3-97
 ribose, 3-89
 rice
 Black Sesame Rice Crisps, 4-304
 Candied Orange and Carrot Pulao, 5-94
 Cantonese Fried Rice, 2-176–177
 Crispy Dosa, 3-355
 Foie Gras Soup with Bomba Rice and Sea Lettuce, 3-149
 Paella Rice, 5-239, 241
 Pressure-Cooked Vegetable Risotto, 3-308
 puffed, parametric recipe for, 4-302
 Ragout of Grains, 5-125, 129
 Risotto Milanese, 3-306–307
 smoking, parametric recipe for, 3-362
 Steamed Sticky Rice, 5-113, 119
 thickening with, parametric recipe for, 4-28
 Toasted Rice Milk, 4-59
 rice bran, Nukazuke, 3-354
 rice cookers, for sous vide cooking, 2-240
 rice crisp
 parametric recipe for, 4-302
 Rice Crisp, 5-31, 32
 rice flour, 3-376
 rice flour pasta and, parametric recipe for, 3-381
 rice starch, 4-20, 28
 rice stick noodles, Pad Thai, 3-385
 rice vinegar, Soy Vinegar Infusion, 5-253, 256
 Rich Brown Stock, 2-297
 Richot, Charles, 1-238
 ricotta cheese
 Crispy Goat’s Milk Ricotta Dumpling, 5-273, 274
 Goat Milk Ricotta, 4-108
 parametric recipe for, 4-104
 Tomato Whey Broth, 4-49
 Rienzner, Cristiano, 1-70
 rigid containers, vacuum packing using, 2-226–227
 rigor mortis, in muscle after slaughter, 3-32, 34
 rillettes
 Beef Shank Rilette, 5-49, 52
 Heather-Smoked Sturgeon Rillettes, 5-233, 235
 rinsing, after brining, 3-156, 158
 ripening
 on command, how to, 3-285
 of cured meat or seafood, 3-167, 173
 of fruit, 3-283–284
 sous vide technique of, 2-250
 synchronized, chemistry of, 3-284

- Ripert, Eric
 Escolar with Red Wine Butter recipe, 3-104
 Fluke Ceviche recipe, 3-203
 New International cuisine and, 1-30
 pot-au-feu of, 5-49
- risotto
 best bets for, 3-305
 example recipes for, 3-306–309
 parametric recipe for, 3-304–305
 Risotto Milanese, 3-306–307
 starch release during cooking of, 3-282
- ristrettos
 blonding phase and, 4-388
 brewing, skill of choosing temperature for, 4-385
 evolution of, 4-379
- Rittinger's law, 2-401
- Ritz, César, 1-20
- The River Café, New American cuisine and, 1-28, 29
- RNA, in viruses, 1-152
- RO. *See* reverse osmosis
- roast. *See also* roasting; *specific foods*
 derivation of term, 2-101
 FDA Food Code on cooking, 1-174
 sous vide vs. combi oven cooking of, 2-167–168
- Roast Pigeon Crown, 5-126, 132
- Roasted Candlenuts, 5-175, 177
- roasted hazelnut oil extract, parametric recipe for, 2-326
- Roasted Scallion Marmalade, 5-253, 255
- roasted-hazelnut oil, Hazelnut “Cream,” 4-236
- roasting, 2-28–35
 of beer can chicken, science of, 2-109
 calculations for, 2-28, 32
 cutaway illustration of, 2-104–105
 extended and simplified 6D
Salmonella reduction guidelines for, 1-190
 historical uses of, 1-16
 of meat
 jus formation and, 2-343
 whole, FDA Food Code on oven temperatures for, 1-186
 whole, FDA Food Code on time and temperature for, 1-182–183, 184
 pot-roasting as. *See* pot-roasting
 program cooking in combi oven for, 2-169
 Ronco Showtime Rotisserie Oven for, 2-34–35
 spit-roasting as, 2-32–33
 turning or not turning in, 2-32–33
 of whole hog, 2-30–31
- Robuchon, Joël
 on Adrià as chef, 1-39
 mashed potatoes of, 1-37, 58
 New International cuisine and, 1-30
 Nouvelle cuisine and individuality of, 1-27
 Potato Puree recipe, 3-296, 297
 restaurants of, 1-31
 Shellfish Custard recipe, 4-162
 sous vide cooking and, 1-41, 42, 43, 2-195
- Robusta coffee beans, 4-358
- Roca, Joan
 biography of, 1-58
 as Catalan/Spanish chef, 1-258
 Eggplant Foam recipe, 4-280
 Modernist cuisine and, 1-57
 Oysters with Cava Foam recipe, 4-277
 rotary evaporation and, 2-388
 Smoked Octopus recipe, 3-215
Sous Vide Cuisine by, 1-83
 Suckling Pig Shoulder with Shallot and Orange Sauce recipe, 3-110
- Roche, Ben, 1-69
- rock salt for brine, table salt vs., 2-260
- Rocket Evaporator, 2-391–395
 example recipes for, 2-394
- rocket widget, in Guinness beer cans, 4-250
- rockfish, cooking sous vide, parametric recipe for, 3-102
- Roellinger, Olivier
 Exotic Spice Mixture recipe, 2-405
 Indies Spice Blend recipe, 2-403
 19th-Century-Style Lobster with Sherry and Cocoa recipe, 3-107
- roller mills, for dry-grinding, 2-404
- rolling boil, blanching using steam vs., 2-267
- romaine lettuce
 Caesar Salad, 3-373
 Smoked Lettuce, 5-11, 15
- Roman Empire
 cookbook of, 1-10. *See also* *Apicius*
 gastronomy of, 1-10–12
- Romano beans, Fresh Bean Salad, 5-85, 87
- Rømer, Ole, measuring speed of light and, 2-191
- Romera, Miguel Sánchez
 Steamed Cod with Cod Roe Velouté and, 4-32
 tapioca starch gel product by, 4-29
- Romesco Sauce, 2-419
- Ronco Showtime Rotisserie Oven, 2-34–35
- root vegetables. *See also* *specific root vegetables*
 Root Vegetable Jus, 5-161, 163
 Root Vegetable Risotto, 3-309
 Sous Vide Root Vegetables, 5-49, 53
- roots, gelling agents from, 4-126
- rose petals
 Blossom Salad, 5-171, 172
 Crystallized Rose Petals, 3-368
- rose water, distillation of, 2-390
- rosemary extract, parametric recipe for, 2-326
- rosetta pattern, for caffè lattes, 4-392, 394–395
- rotary evaporators, 2-384–394
 boiling point vs. vacuum pressure in, 2-391
 for concentrating flavor, 2-379, 380
 distillation using, 1-94, 2-384, 388–391
 essential oils and, 2-320
 manufacturers of, 2-384
 for Modernist kitchen, 2-285
 parts of, 2-386–387
 Rocket, Genevac, 2-391–395
- rotary vegetable slicers, Japanese, 3-327
- rotavaps. *See* rotary evaporators
- rotaviruses, 1-155
- Rothschild, Philippe de, 4-350
- rotisseries
 roasting without turning vs. using, 2-32–33
 sous vide vs., 2-228
- rotors
 in colloid mills, 2-413–414
 in rotor-stator homogenizer, 2-413
- rotor-stator homogenizers
 breaking down food with, 2-400
 dispersing thickeners with, 4-24
 egg emulsions and, 4-226
 emulsifying with, 4-206, 208, 209
 foam forming with, 4-252
 friction effects in, 1-274
 hydration of ion-coagulated gels with, 4-124
 hydrocolloid dispersion with, 4-38
 for Modernist kitchen, 2-284
 for shearing gels into fluids, 4-176
 wet-grinding with, 2-413, 420–421
- roundworms, 1-120–123
 anisakid, 1-122–123
Ascaris lumbricoides as, 1-123
Trichinella as. *See* *Trichinella spiralis*;
 trichinellosis
- roux
 flavor of reduced jus vs., 4-11
 hydrocolloid dispersion in, 4-38
 technique of, 4-20, 22
- Roux, Albert, 1-28, 41
- Roux, Michel, Nouvelle cuisine in the U.K. and, 1-28
- Rouxl Britannia restaurants, 1-41
- royale custard, parametric recipe for, 4-92
- rubs, dry
 Kansas Rub, 5-66, 68
 Memphis Rub, 5-66, 68
 parametric recipe for, 3-168–172
- Ruhlman, Michael, 1-44, 95
 Blackstrap Molasses Country Ham recipe, 3-183
- Ruscalleda, Carme
 as Catalan/Spanish chef, 1-258
 crisping fish skin by, 3-129
- Russia, early gastronomy of, 1-8, 10
- Russian Pelmeni plated-dish recipe, 5-233–237
- Russian Smoked Salmon, 3-212
- rutabagas
 cooking sous vide, parametric recipe for, 3-289, 290
 preserving, parametric recipe for, 3-348
 Root Vegetable Jus, 5-161, 163
 in Sauerkraut, 3-351, 5-35
 Sous Vide Root Vegetables, 5-49, 53
- Rye Bread, 5-55, 59
- S
 sabayon
 Blood Orange Sabayon, 5-147, 148
 Smoked Potatoes with Vin Jaune Sabayon, 3-363
 Sous Vide Sole with Bergamot Sabayon, 4-274
- sablefish, cold-smoking, parametric recipe for, 3-210
- safety. *See also* food safety
 cryogen handling, 2-464, 466–467
 liquid nitrogen and, 2-459, 464, 466
 meat grinding or chopping tools and, 3-233
 with microwave oven, 2-190
 Modernist cooking and, 1-101
 with pressure cooker, 2-291–292, 3-298
 steam burns and, 1-319, 2-154
- safflower oil, chemistry of, 2-126
- saffron extract, parametric recipe for, 2-326
- Saffron Honey Foam, 5-94
- saffron infusion, parametric recipe for, 2-310
- salads. *See also* coleslaw
 Blossom Salad, 5-171, 172
 Crispy Beef and Shallot Salad, 5-43, 47
 Cucumber Black-Eyed Pea Salad, 5-94
 Fresh Bean Salad, 5-85, 87
 Green Mango and Cashew Salad, 5-167, 169
 Marinated Crab Salad, 5-189, 191
 Navel Orange Salad, 5-135, 138
 Pea Vine Salad, 5-273, 275
 Piquillo Pepper and Strawberry Salad, 5-277, 278
 Potato Salad, 5-67, 73
 Puffed Chickpea Salad, 5-135, 138
 Warm Potato and Pistachio Pesto Salad, 4-53
- salamander
 browning in, after sous vide cooking, 2-272–273
 as original broiler, 2-18, 20
- salami, parametric recipe for, 3-244–245
- salinity
 of brined and cured food, 3-152
 for brining, 3-154, 156, 158
 for curing, 3-160
 measuring, 2-313
 during brining, 3-158
- salmon
 cold-smoking, parametric recipe for, 3-210
 cooking sous vide, parametric recipe for, 3-102
 diet and flesh color of, 3-93
 Grapefruit-Cured Salmon, 3-180
 Russian Smoked Salmon, 3-212
 Salmon Custard, 4-119
 Salmon Poached in Licorice, 4-155
 Salmon Rus plated-dish recipe, 5-161–165
 Salmon Tartare Cornets, 3-68
 in sorrel sauce, as first plated dish, 1-25
 Sous Vide Salmon, 5-161, 162

- Salmon Skin Soufflé, 5-161, 163
- Salmonella* spp.
 CDC on foods associated with, 1-180
 “danger zone” temperatures and, 1-176, 177, 178–179
 extended and simplified 6D reduction guidelines for, 1-190
 FDA Food Code on cooking pork and, 1-179
 FDA Food Code on thermal death curve for, 1-182–189
 flesh contamination and, 1-117
 as foodborne pathogens, 1-134
 FSIS on reduction of, 1-168
 misconceptions about, 1-118
 in poultry, FDA 2009 Food Code on, 1-175
 replication limits of, 1-145
- Salmonella enterica*, 1-132, 145
- Salmonella enteritidis*, 1-118
- Salmonella* Heidelberg, 1-132
- Salmonella typhimurium*, 1-132
- salmon-poisoning fluke, 1-124
- salsify
 cooking sous vide, parametric recipe for, 3-289
 Fossilized Salsify Branch, 3-399
 Milk Skin with Grilled Salsify and Truffle Puree, 4-114
 Salsify Fondant, 5-205, 207
- salt cod broth, parametric recipe for, 2-304–305
- Salt Gel, 5-5, 9
- salt pickles, parametric recipe for, 3-349
- salt (sodium chloride or table salt). *See also* brines; brining; curing; ice-brine baths; salting
 bitter flavors and, 5-227
 for brine, rock salt vs., 2-260
 characteristics of, 3-152, 154
Clostridium perfringens and, 1-141
 concentration of, brining and, 3-154
 drying with, 2-430, 3-344
 in fermented sausage, 3-250
 formation of, 4-126
 freezing-point depression and, 1-305
 health and, 1-234, 236–237
 hypertension research and, 1-234
 for juicing, 2-335
 legislation regulating, 1-237
 moisture absorbed by, 2-428
 nucleation sites in boiling and, 1-316
 organic label for, 1-245
 other salts for brining vs., chemistry of, 3-157
 production process for, 1-256
 in sausage, 3-223
 scaling using baker’s percentages and, 1-96
 seasoning with, 2-312
 sel rose as
 chemistry of, 3-162
 composition of, 3-161
 solubility in water of, 1-331, 332
 weights and measures for, 1-94
- salt-coagulated egg, parametric recipe for, 4-82
- Salted, Freeze-Dried Lobster, 2-454, 5-185
- Salted Caramel Apple Puree, 5-17, 20
- salted cod roe, Fossilized Salsify Branch, 3-399
- Salted Cucumber, 5-233, 236
- Salted Halibut, 3-187, 5-151
- salted pollock roe, Fossilized Salsify Branch, 3-399
- salting. *See also* brining; curing
 example recipes for, 3-350–351, 354
 of fish, scombroid poisoning and, 1-139
 parametric recipe for, 3-348–349
 protein gel of meat and seafood and, 3-84
 with salts other than sodium chloride, chemistry of, 3-157
- salt peter
 for dry-curing, 3-165
 for food preservation, 1-144–145
 in sel rose (curing salt), 3-162
- salts
 curing
 cold-smoked food and, 2-143
 composition of, 3-161
 in fermented sausages, 3-222
 in sausage, 3-226
 sel rose and, chemistry of, 3-162
 sodium nitrate in, 3-158
 for marinating, 3-190
 mineral, plant food cooking and, 3-278
 salting with salts other than sodium chloride and, chemistry of, 3-157
- saltwater, shellfish flavors and, 3-27
- salty brine. *See* ice-brine baths
- sampling error, in small-scale studies, 1-218
- Sanders, Harland
 The Colonel’s Chicken recipe, 3-336
 franchises of, 1-31
 innovations of, 1-21, 22
 pressure fryers and, 2-120
 trade secrets of, 1-76
- sandwiches, Egg Salad Sandwich, 4-90
- sanitization, pasteurization vs., 2-250
- Sant Pau. *See* Ruscalleda, Carme
- Santamaria, Santi, 1-63, 258
- Sant’Eustachio Il Caffè, 4-374, 396
- Santini, Nadia, Nouvelle cuisine and, 1-28
- Santos, Rafael García, 1-59
- sarcomeres, in muscle, 3-6, 8–9
- sardines
 cooking sous vide, parametric recipe for, 3-102
 Eggplant Foam, 4-280
- saturated condition, solubility and, 1-331
- saturated fat. *See also* cholesterol
 characteristics of, 1-222
 French cuisine and, 1-228
- saturated oils, flavor of unsaturated oils vs., 2-126
- saturated solutions, 1-331, 332
- saturation vapor pressure, 1-320
- saucers. *See also* barbecue sauces
 cheese, parametric recipe for, 4-223
 converting grams to volumes for, 5-XXXVII
 cooling of, 1-206
 flour-thickened, flavor release and, 4-11
 freeze-drying, parametric recipe for, 2-451
 Jus Gras, 4-237
 Pasta Marinara, 3-386
- saucers (*continued*)
 Pressure-Cooked Polenta with Strawberry Marinara, 4-50
 Rémoulade Sauce, 5-67, 75
 Sauce Allemande, 4-88
 Sauce Vin Jaune, 5-113, 116
 Sea Urchin Tartar Sauce, 5-143, 145
 smoking and application of, 3-211
 Sofrito, 5-239, 243
 stocks for, 2-288
 thickening strategies for, 2-346
 vacuum evaporation for reducing, 2-346
 XO Sauce, 4-52
- sauces
 parametric recipe for, 3-244–245
 Sausisson Sec, 3-247
- sauerkraut
 about, 5-39
 Braised Sauerkraut, 5-35, 39
 Sauerkraut, 3-351, 5-35
- sausage stuffers, 3-227, 232
- sausages, 3-220–250. *See also* chorizo
 Alsatian Munster Sausage, 5-35, 39
 basic principles of, 3-220, 222
 blood, history of, 3-220
 Boudin Blanc, 3-243
 Cantonese Fried Rice, 2-176–177
 casing for
 preparation of, 3-226
 types of, 3-227
 Coarse Fat-Gel Sausage, 3-248
 coarse-ground, 3-220, 222
 best bets for, 3-236–237
 cryoshattering for, 3-230
 parametric recipe for, 3-236–237
 cold-smoked, 2-143
 emulsified, 3-222, 225
 best bets for, 3-238–239
 Emulsified Sausage with Fat Gel, 3-248
 Emulsion-Style Sausages, 3-238–239
 fat in, incorporating and holding, 3-224–225
 fermented. *See* fermented sausages
 Fermented Sausage, 3-244–245
 forming and finishing, how to, 3-240–241, 246
 Frankfurter, 3-242
 fresh, 3-222
 Fried Chicken Sausage, 3-249
 gel (binding) for, making, 3-222–223
 Green Garlic and Pork Sausage, 5-85
 hot-smoking, parametric recipe for, 3-210
 Italian Sausage, 3-242
 linking technique for, 3-230
 Low-Fat Chicken Sausage, 3-248
 meat gels and, 3-70
 meat grinding or chopping tools for, 3-230–233
 Modernist, 3-248–249
 other ingredients in, 3-225–227
 overcooking, precautions for, 3-233
 poach test for, 3-225
 pregrinding meat treatments for, 3-228
 Rare Beef Sausage, 3-249
 sheets of, 3-241
 stuffing, 3-227, 230
 tenderness of, fat and, 3-224
 Toulosain Garlic Sausage, 5-81, 82
 Sautéed Maitake Mushroom, 5-11, 15
- sautéing, 2-44–47
 covered, 2-58–61
 chao technique and, 2-54
 cutaway illustration of, 2-60–61
 searing or glazing before, 2-58
 flipping food in, 2-46–47
 heat transfer by conduction in, 1-277
 pan selection for, 2-45
 tips for, 2-44
- Savoy, Guy
 Gras, Laurent and, 1-69
 New International cuisine and, 1-30
- savoy cabbage
 Sauerkraut, 3-351
 White Coleslaw, 5-67, 72
 Wok-Fried Malaysian Vegetables, 5-167, 169
- Saxe, Godfrey, 3-220
- Scabin, Davide, 1-70
- scales
 temperature, 1-266, 285–286
 for weight measurement
 digital. *See* digital scales
 laboratory, for measuring
 thickeners, 4-23
- scallions, Roasted Scallion Marmalade, 5-253, 255
- scallops
 biology of, 3-26, 27
 Chawanmushi, 4-96
 chicken skin glued to, 3-252
 contamination of, 3-27–28
 cooking sous vide, parametric recipe for, 3-103
 freeze-drying, parametric recipe for, 2-451
 Scallop Mochi, 4-308–309, 5-197, 202
 Scallop Tartare, 3-67
 in Seafood Paper, 3-188
 shucking of, 3-52
- Scandinavia, early gastronomy of, 1-8, 10
- Schecter, Andy, 4-396
- Schilling, Hans and Marketta, 1-33, 34
- schizophrenia, *Toxoplasma gondii* and, 1-127
- Schlosser, Eric, 1-23
- Schlow, Michael, Achatz’s first meal at elBulli and, 1-38
- schmaltz, chemistry of, 2-126
- Schneider, Martin, 1-70
- schnitzels, 2-127
- Schomer, David
 on consistency, 4-396
 cooling burr grinders by, 4-376, 378
 espresso-making and, openness of, 4-374
 inventions by, 4-398
 Myhrvold and, 4-375
 profile of, 4-399
- Schroeder, William, 1-62–63
- Schultz, Howard, 4-398
- Schwa, 1-69
- scientific names, origin of, 1-112
- scientific research. *See also* double-blind trials; food science; randomized clinical trials
 food safety rules and, 1-166
- sCJD (sporadic Creutzfeldt-Jakob disease)
- scombroid poisoning, spoiled fish and, 1-139

- scorching, of deep-fried foods, 2-125
 Scoville, Wilbur, 3-270
 Scoville Heat Units (SHU), 3-270
 scrambled eggs
 parametric recipe for, 4-92
 Scrambled Egg Foam, 5-215, 216
 scrapie, 1-157, 158
 screw tops, for wine bottles, 4-344, 346
 sea bass, cooking sous vide, parametric recipe for, 3-102
 sea cucumber
 about, 5-203
 Bincho-Tan-Grilled Sea Cucumber Maitake Mushroom, Shisito Pepper, 5-197, 203
 sea lettuce, 5-28
 sea urchin tongues
 Sea Urchin Bottarga, 3-186, 5-225, 226
 Sea Urchin Butter, 5-225, 227
 Sea Urchin Tartar Sauce, 5-143, 145
 Sea Urchin Tofu, Tokyo Negi, Sesame, Ponzu, 5-197, 202
 Shellfish Custard, 4-162
 Uni with Whipped Tofu and Tapioca, 4-285
 sea urchins, biology of, 3-30–31
 seafood. *See also* fish; shellfish; *specific types of seafood*
 Activa as glue for, 3-250–256
 blanching or searing before cooking, 2-269
 brining, 3-152, 154, 156, 158
 best bets for, 3-172
 converting muscle into, 3-37–38, 40, 42
 cooking
 color and appearance of, 3-92–93
 flavor and, 3-84, 87–91
 grilling. *See* grilling
 ideal temperature for, 3-89
 innards of, 3-142–143
 juiciness of, 3-79, 83
 muscles and, 3-5
 optics of, 3-93–94
 skin of, 3-129–132
 sous vide, 2-206, 276–279
 stages in, from raw to cooked, 3-76, 78–79
 succulence of, 3-83–84
 tenderness of, 3-70
 trade-offs in, 3-94–95
 critical temperature for freeze-drying, 2-446
 crustaceans, biology of, 3-28–31
 cured
 ripening of, 3-167, 171
 smoking of, 3-173
 curing, 3-158, 160, 162
 best bets for, 3-172
 cutting, 3-52–60
 fermenting, drying with warm air and, 2-433
 frozen, handling and quality of, 1-182
 how muscle works in, 3-20–31
 Maillard reaction and flavor of, 3-89–91
 marinating, 3-190–207
 mollusks, biology of, 3-24–26
 muscles in, 3-20–31
 salting. *See* curing
 sausage made from
 seafood (*continued*)
 best bets for, 3-238
 making a gel (binding) for, 3-222
 Seafood Paper, 3-188
 searing before covered sautéing of, 2-58
 shellfish. *See* shellfish
 smoking, 3-208–219
 best bets for, 3-210
 sources for, 5-XXXIII
 tartares, 3-62–64, 66–69
 temperature and flavor of, 3-88–89
 tenderizing enzymes in, 3-78
 tenderness of, 3-10–11
 seafood brine, basic, parametric recipe for, 3-168
 seal meat, myoglobin in, 3-15
 Sealed Air Corporation, 1-42
 seals, for canning, 2-77
 seam cutting, 3-45, 47
 Seared Hamachi, 5-147, 149
 Seared Langoustine, 5-239, 245
 Seared Strawberry, 5-277, 279
 searing. *See also* cryosearing
 with charcoal vs. gas grills, 2-11
 in combi oven, convection mode for, 2-168
 covered sautéing and, 2-58
 to crisp skin, 3-123
 extended and simplified 6D *Salmonella* reduction guidelines for, 1-190
 food safety and, 1-191
 frozen meat, 3-122
 before Jaccarding, 3-51
 a la plancha, 2-40–41
 for Maillard reaction, 3-95
 for sealing juices in meat, myth of, 3-85
 for sous vide cooking, 2-267, 269, 270–275
 temperatures for, 1-186–187
 before vacuum packing vs. after cooking, 2-268
 seasonings. *See also* dry rubs; spice mixes; spices; *specific seasonings*
 converting grams to volumes for, 5-XXXVIII
 meat and seafood, 3-88
 with salt and other flavor enhancers, 2-312
 with wine, beer, and spirits, 2-317
 seasoning woks or frying pans, 2-53
 Seattle, as coffee capital of the world, history of, 4-398
 Seattle's Best Coffee, 4-398
 seaweed
 Bacon Dashi, 2-308
 Fluke Cured in Kombu, 3-181
 Foie Gras Soup with Bomba Rice and Sea Lettuce, 3-149
 gelling agents from, 4-68, 126
 Hon Dashi, 2-306, 5-197
 hydrocolloids from, 4-124
 Marinated Ogo, 5-175, 177
 preserving, parametric recipe for, 3-348
 Seaweed Tapenade, 5-25, 27
 Seaweed Vinegar, 2-315
 thickening agents from, 4-5, 19
 types of, 5-28
 secondary emulsion, 4-206
 The Secret Life of Germs (Tierno), 1-196
 sedimentation
 as draining in foams, 4-249
 as emulsion failure, 4-210
 seeds
 distribution of, ecology of, 3-265
 hydrocolloids from, 4-124
 mustard, preserving, parametric recipe for, 3-348
 seasonal mélanges with, 3-294
 sesame, Pressure-Cooked Sesame Seeds, 3-303, 5-181
 toxins in, and propagation of, 3-262
 typical
 fat content of, 5-XLIII
 water content of, 5-XLI
 sel rose
 chemistry of, 3-162
 composition of, 3-161
 selection bias, nutritional studies and, 1-219
 selenium, health benefits of, 1-235
 self-cleaning combi ovens, 2-169
 semiconvecting foods, pressure-canning of, 2-88
 semidry sausages, 3-246, 250
 semolina pasta
 parametric recipe for, 3-381
 Semolina Pasta, 3-382
 Senderens, Alain
 Duck Apicius and, 5-121
 Foie Gras à la Vapeur recipe, 5-109
 Le Nouveau Guide on, 1-26
 on wine pairings, 4-352
 sensory science
 Blumenthal and, 1-50
 of wine tasting, 4-337
 sequestrants
 calcium and, 4-126–127
 coagulant molecules and, 4-72
 hydrating ion-coagulated gels with, 4-125
 using, 4-129
 Sergi Arola Gastro, 1-57
 serovars (serotypes), bacterial variants as, 1-132
 Serra, Richard, Yogurt Foam and Sweet Potato Chips recipe, 4-287
 Serrano, Julian, New International cuisine and, 1-30
 service à la Russe, 1-25
 serving temperature
 brewed coffee and, 4-364
 gel selection and, 4-73
 thickener selection and, 4-14–15
 sesame oil, chemistry of, 2-126
 sesame seeds, Pressure-Cooked Sesame Seeds, 3-303, 5-181
 set foams, 4-288–301
 baked, water as secondary foaming gas for, 4-254
 baked goods as, 4-245
 best bets for, 4-288–289
 example recipes for, 4-290–301
 frozen, 4-245, 247
 parametric recipe for, 4-288–289
 as thermo-irreversible gels, 4-244
 vacuum-inflated, 4-252, 254, 310–315
 settling period
 in baking, 2-106
 in deep-frying, 2-116–117
 in drying, 2-431
 Seven Countries Study, 1-225
 shaft horsepower, 1-274
 shallots
 cooking sous vide, parametric recipe for, 3-289, 290, 292
 Crispy Beef and Shallot Salad, 5-43, 47
 puree of, parametric recipe for, 2-425
 shallow frying
 amount of oil for, 2-127–128
 heat conduction in, 2-127
 Shanghai Soup Dumplings plated-dish recipe, 5-253–256
 Shangri-La diet, 1-241
 Shanker, Anjana, chaat masala made by, 5-281
 shark, Greenland, chemistry of, 3-43
 Shaved Foie Gras, 3-177
 shear forces
 in foam forming, 4-252
 viscosity of fluids and, 4-5–6
 shear-thinning fluids
 emulsions as, 4-204
 fluid gels as, 4-16, 176
 as non-Newtonian fluids, 4-6
 whipped cream as, 4-248
 sheep. *See also* lamb
 scrapie in, 1-157
 sheep liver fluke, 1-123
 shellfish. *See also specific shellfish*
 allergies to, 1-238
 biology of, 3-26–28
 cooking sous vide
 example recipes for, 3-107
 parametric recipe for, 3-102–103
 fat content of, 5-XLIII
 plated-dish recipes for, 5-179–207
 raw, food safety and, 3-27–28
 Shellfish Butter, 2-329
 Shellfish Custard, 4-162
 Shellfish Omakase plated-dish recipe, 5-197–203
 smoked
 example recipe for, 3-215
 parametric recipe for, 3-210
 tender, cooking sous vide
 best bets for, 3-103
 parametric recipe for, 3-103
 tough, cooking sous vide
 best bets for, 3-108
 example recipes for, 3-112
 parametric recipe for, 3-108
 shellfish consommé, parametric recipe for, 2-374–375
 shellfish jus, parametric recipe for, 2-344–345
 shellfish sausage, parametric recipe for, 3-238–239
 shellfish stock
 parametric recipe for, 2-296–297
 Shellfish Stock, 2-297, 5-185, 186
 Shelton, Winston. *See also* CVap water-vapor ovens
 on forced convection in ovens, 2-159
 pressure fryers and, 2-120
 Sherry Gel Cube, 5-267, 270
Shigella spp., 1-134, 145
 Shigoku Oyster with Fizzy Grapes, Fresh Wasabi, and Miso Powder, 5-197, 200
 shiitake mushrooms
 cooking sous vide, parametric recipe for, 3-289
 Mushroom and Bacon Cappuccino, 4-275

- shiitake mushrooms (*continued*)
 Mushroom Ketchup, 5-11, 13
 Mushroom Puree, 5-215, 216
 Shiitake Marmalade, 5-5, 7
 Sichuan Bok Choy, 3-313
 Sweetbreads with Sour Mango Powder and Shiitake, 3-151
- shimeji mushrooms
 Compressed Dill Pickled Vegetables, 5-55, 58
 cooking sous vide, parametric recipe for, 3-289
 French Scrambled Eggs, 4-93
- Shimomura, Koji, 1-70
- shisito pepper, Bincho-Tan-Grilled Sea Cucumber Maitake Mushroom, Shisito Pepper, 5-197, 203
- SHMP. *See* sodium hexametaphosphate
- shot glass, pulling espresso shot into, 4-384
- shrimp
 biology of, 3-28, 31
 brining, parametric recipe for, 3-172
 dried, Pad Thai, 3-385
 Fermented Shrimp Sheets, 5-167, 168
 as seafood gel, 3-222
 Shrimp and Grits, 3-377
 Shrimp Cocktail, 3-107
 Shrimp Cocktail plated-dish recipe, 5-180–183
 Spot Prawn and Lotus Root Tempura with Smoked White Soy Sauce, 5-197, 201
- SHU (Scoville Heat Units), 3-270
- SI units (*Système International d'Unités*), 1-272
- Sichuan Bok Choy, 3-313
- side towels, cross-contamination and, 1-200
- Siebeck, Wolfram, 1-62
- sieving. *See also* filtering
 equipment for, 2-286
 for filtering, 2-351, 353
- signature dishes, Modernist cuisine at elBulli vs., 1-37
- silica gel
 desiccant properties of, 2-428, 433
 freeze-dried food storage and, 2-447
- silicone mats, 2-286
- silicone molds, 2-286
- silicone oven mitts, conduction in, 1-280
- Silken Tofu, 4-113
- simmering
 boiling vs., 1-316
 definition of, 1-317
- simple syrup, as reduction, 4-11
- simulations, computer. *See* computer simulation models
- Sinclair, Upton, 3-35
- single-disc mills, for dry-grinding, 2-404
- sinks, cross-contamination and, 1-200
- Siphoned Soufflé à la Lorraine, 4-297
- Siphoned Tempura Batter, 5-143, 144
- siphons. *See* soda siphon; whipping siphons
- skate
 cooking sous vide, parametric recipe for, 3-102
- skate (*continued*)
 Skate in Black Butter plated-dish recipe, 5-157–159
 Skate Pavé with Bread Crust, 5-157, 159
- skin, 3-116–135. *See also* chicken skin; duck skin; fish skin
 baking chicken upright and, 2-109
 of cephalopods, 3-24
 components of, 3-116
 cooking separately from meat, 3-122
 crisping, 3-123
 approaches to, 3-123
 after cooking sous vide, 2-268
 of fish, 3-129
 slime as key to, 3-129
 of small fish, how to, 3-130
 sous vide, of fish, 3-131
- meat
 cooking, 3-116–129, 133–135
 gluing on, 3-252
 puffing, 3-123
 softening, 3-116, 118, 122–123
- skin-puncturing tool
 for Modernist kitchen, 2-286
 Peking Duck cooking using, 3-122
- skyr, parametric recipe for, 4-56
- slaughterhouse practices, 3-32, 34–35, 36
- Slayer espresso machine, 4-398, 400, 401
- slicing
 of fish, for nigiri sushi, 3-60
 of meat, 3-47, 50, 76
- slime, crispy skin and, physiology of, 3-129
- Slow Food, history of, 1-23
- slow-curing rub, parametric recipe for, 3-169
- slow-twitch muscles
 fast-twitch muscles vs., 3-11–12
 fat content and, 3-18
 in meat, 3-11–12
 meat color and, 3-14–15
- slug-and-column boiling, 1-316, 318, 2-68–69
- slurry method, for Activa bonds, 3-256
- small dense low-density lipoproteins (sdLDL), 1-226, 227
- small-scale scientific studies, 1-218
- SMC (super methylcellulose), for cellulose gum gels, parametric recipe for, 4-170, 171
- smells. *See* aromas; odors
- Smith, Clark, on dealcoholization, 4-331
- smoke. *See also* smoking
 capturing flavor of, 2-138
 chemistry of flavor and, 2-12
 hot vs. cold, 2-140–141
 liquid
 chemistry of, 2-149
 for cold-smoking, 3-361
 making, 2-134, 137
 smell of, appeal to humans, 3-208
 temperature of, 2-140–141
- smoke condensates, drenching food with, 2-149
- smoke gun, packing and lighting, how to, 3-214
- smoke points, of frying oils, 2-116, 125, 126
- Smoked Egg Crème Caramel, 4-101
- smoked fish, example recipe for, 3-212
- Smoked Lettuce, 5-11, 15
- Smoked Octopus, 3-215
- Smoked Pepper Puree, 5-55, 57
- Smoked Pork Cheek, 5-35, 38
- Smoked Potato Confit, 5-193, 195
- Smoked Potatoes with Vin Jaune Sabayon, 3-363
- smoking, 2-132–149, 3-208–219. *See also* barbecue; smoke
 air flow and temperature for, 2-137
 capturing flavor in, 2-138
 chemicals and, 2-140
 cold, 2-141–143, 3-61
 of dairy products
 best bets for, 4-100
 example recipes for, 4-101
 of deep-frying oil, 2-124
 of eggs, best bets for, 4-100
 equipment for, 2-146–147, 285, 3-208
 of fermented sausages, 3-222
 fire for, 3-208, 211
 of fish, scombroid poisoning and, 1-139
 flesh surface in, 3-211
 hot, 2-143, 148, 3-211, 361
 humidity and, 2-132
 by hunter-gatherers, 1-6
 making smoke for, 2-134, 137
 of meat
 example recipe for, 3-213
 parametric recipe for, 3-210
 myths and lore of, 2-145
 of plant foods, 3-344, 361–363
 example recipe for, 3-363
 parametric recipe for, 3-362
 progressive, 2-148
 regional specialties in, 3-218–219
 ripening of cured meat or seafood and, 3-173
 of sausages, 3-240
 of shellfish
 example recipe for, 3-215
 parametric recipe for, 3-210
 smoke temperature in, 2-140–141
 tapeworms and, 1-124
 temperature for, 2-132, 135
 wet vs. dry food and, 2-141
 wood choices for, 2-136
- snails
 biology of, 3-26
 cooking sous vide, parametric recipe for, 3-108
 farmed, 5-243
 Sous Vide Braised Snail, 5-239, 243
- snapper
 cooking sous vide, parametric recipe for, 3-102
 Crispy Snapper Skin, 5-167, 168
 Sous Vide Snapper, 5-167, 169
- SNCF (French railway system), sous vide cooking and, 1-41
- soap, as surfactant, 4-202
- Soccarat Tuile, 5-239, 245
- “The Socrates of the Nouvelle Cuisine,” 1-26
- soda siphon, 2-286
- soda water
 Priestley’s “fixed air” and, 2-464
 taste of, 2-465
- sodas
 carbon dioxide for, 1-334, 4-254
 ready-to-drink, 1-20
- sodium, ion-exchange filters and, 1-335
- sodium alginate
 as emulsion stabilizer, 4-215
 as foam stabilizer, 4-257
 grades of, 5-256
 interactions with other thickeners, 4-44–45
 product guide for, 4-IV–V
 properties and uses of, 4-42–43
 for spherification, parametric recipe for, 4-187
- sodium benzoate, fresh juice color and, 2-338
- sodium caseinate, for froths, parametric recipe for, 4-264
- sodium citrate
 hydrating ion-coagulated gels with, 4-126
 processed cheese food and, 4-222
 product guide for, 4-IV–V
 as sequestrant, 4-129
- sodium hexametaphosphate (SHMP)
 for brining or curing, 3-157
 for hot fruit gels, parametric recipe for, 4-165
 hydrating LA gellan with, 4-125
 product guide for, 4-IV–V
 as sequestrant, 4-129
 for spherification, parametric recipe for, 4-187
- sodium nitrate, 3-158, 165
- sodium nitrite, 1-144–145, 3-165, 226
- sodium pyrophosphate, 4-IV–V
- sodium tripolyphosphate
 for brining or curing, 3-157, 158
 in marinade, 3-143
 myosin extraction for sausage and, 3-223
- Sofrito, 5-239, 243
- soft drinks
 carbon dioxide for, 1-334, 4-254
 ready-to-drink, 1-20
- soft-boiled eggs
 parametric recipe for, 4-79
 perfect, how to, 4-79
 process for, 4-74
 Soft-Boiled Egg and Garlic Emulsion, 4-227
- sole
 cooking sous vide, parametric recipe for, 3-102
 in Seared Hamachi, 5-147, 149
 sole meunière and, science of, 3-40
 Sous Vide Sole with Bergamot Sabayon, 4-274
- Soler, Juli, 1-33, 34, 38
- solids
 bulking, hydrocolloid hydration and, 4-40
 dissolved, reduction and, 4-11
 as foaming agents, 4-244
 Fourier on heat conduction through, 1-278
 hot, physics of blowing on, 1-288
 internal energy of, 1-264
 physics of, 1-301
 phase changes and thermal energy from, 1-290
 radiant heat from, 1-285
 rheologic descriptions of, 4-VIII
 as solvents, 1-330
 suspended, molding gels with, how to, 4-133
 suspension in, gel selection and, 4-73

- solubility. *See also* dissolved materials
concentration of solution and, 1-331
of polar solids, 1-330
- solubility limit, 1-331
- solubles concentration, brewing control
chart on, 4-366–367
- solubles yield, brewing control chart on,
4-366–367
- solutes, 1-330
- solutions, 1-330. *See also* dissolved
materials; solubility
- Solvay process, 1-255
- solvent extraction, of essential oils,
2-320
- solvents, 1-330
- sonicators, 2-398
- Sontheimer, Carl, 2-412
- sorbet
Aerated Mango Sorbet, 4-311
pacotizing, 2-406, 407, 408–409
Sour Rhubarb Sorbet, 5-277, 279
- sorbitan esters, as surfactant
emulsifiers, 4-216–217
- sorbitol
for hot fruit gels, parametric recipe
for, 4-165
for hot gels, parametric recipe for,
4-160
- Sørensen, Søren Peter Lauritz, 3-194
- soufflés
cutaway illustration of, 4-248–249
Gruyère Soufflé, 4-301
Salmon Skin Soufflé, 5-161, 163
as set foam, 4-247–248
Siphoned Soufflé à la Lorraine, 4-297
- sound, Blumenthal's use of, 1-50
- soup, Adrià's method for serving, 1-52
- Sour Cream Spaetzle (Csipetke), 4-117,
5-55, 59
- sour flavor, coffee brewing and, 4-364
- sour mango powder, Sweetbreads with
Sour Mango Powder and Shiitake, 3-151
- Sour Rhubarb Sorbet, 5-277, 279
- sour vinegar pickles, parametric recipe
for, 3-349
- sous vide methods, 2-192–279
aging braises and pot roasts and,
2-98
aging technique using, 2-250
AGS system of vacuum packing and,
1-40
benefits of, 2-198–199, 201
blanching for, 2-266–275
chilling strategies, 2-251–265
common myths about, science of,
2-206–207
confit, 2-128–129
cook-chill. *See* cook-chill sous vide
methods
cookers for, types of, 2-232–233
cooking foods directly from freezer
and, 2-258, 262
cooking strategies for, 2-204–205,
242–251
cooking times and
for cylinder-shaped food with
diameter 15 cm/ 6 in, 2-276
for cylinder-shaped food with
length 15 cm/ 6 in, 2-277
for cylinder-shaped food with
thickness about equal to
diameter, 2-278
- sous vide methods (*continued*)
for slabs of meat with width and
length five times its thickness,
2-279
cooking to specific temperatures
and, 2-243–247
definition of, 2-195, 197
development of, 2-252, 265
equipment for, 2-228–241. *See also*
equipment; *specific types of*
equipment
for home use, 1-73
extended and simplified 6.SD
Salmonella reduction for, 1-193
extracting flavors with, 2-251
FDA rules on, 1-182, 186, 189
food poisoning and, 1-138
holding food at target temperature
and, 2-247–249
at home, history of, 1-73
infusing flavors with, 2-251
liquid nitrogen and, 2-459
low-temperature steam mode for,
2-157
for mass-market dinners, 2-265
New York City health department
rules on, 1-188, 195
packaging food for. *See* vacuum
packing
pasteurizing for storage using,
2-249–250
reheating and, 2-242, 262, 264
ripening technique using, 2-250
searing and, 2-266–275
smoking using, 2-148
steps in, 2-202–203
stocks and, 2-302
temperature control with,
2-230–231
thawing or cooking foods directly
from freezer and, 2-258, 262
water baths for. *See* water baths
water circulation control for,
2-234–235
- Sous Vide and Pressure-Cooked Veal
Breast with Bulbous Vegetables, 3-111
- Sous Vide Artichoke, 5-239, 244
- Sous Vide Baby Beet, 5-181, 183
- Sous Vide Baby Golden Beet, 5-233,
235
- Sous Vide Beef Juice, 2-349
- Sous Vide Beef Rib Steak, 5-5, 7
- Sous Vide Berry Juice, 2-340
- Sous Vide Black Cod, 5-171, 173
- Sous Vide Braised Snail, 5-239, 243
- Sous Vide Clam and Oat Risotto, 3-308
- Sous Vide Cucumber Pickles, 3-353
- Sous Vide Cuisine* (Roca), 1-58
- Sous Vide Duck Confit Pavé, 5-81, 82
- Sous Vide Duck Ham, 5-85, 87
- Sous Vide Fish Stock, 2-303
- Sous Vide Foie Gras, 5-109, 110
- Sous Vide Glazed Pearl Onion, 5-219,
221
- Sous Vide Golden Beets, 5-233, 235
- Sous Vide Green Asparagus, 5-147, 149
- Sous Vide Guinea Hen, 5-135, 137
- Sous Vide Instant Hollandaise,
1-95–96, 4-228
- Sous Vide Lemon Curd, 4-227
- Sous Vide Lemon Herb Oil, 2-330
- Sous Vide Lentils, 5-267, 271
- Sous Vide Monkfish Pavé, 5-151, 155
- Sous Vide Mussel, 5-151, 154
- Sous Vide Mussel Juice, 2-346
- Sous Vide Octopus, 5-193, 194
- Sous Vide Pigeon Offal, 5-125, 130
- Sous Vide Ponzu, 2-313
- Sous Vide Pork Belly, 5-101, 102
- Sous Vide Prawn Jus, 2-347
- Sous Vide Rabbit Loin, 5-239, 242
- Sous Vide Rare Beef Jus, 2-349
- Sous Vide Root Vegetables, 5-49, 53
- Sous Vide Salmon, 5-161, 162
- Sous Vide Snapper, 5-167, 169
- Sous Vide Sweetbreads, 5-31, 32
- Sous Vide Turnip, 5-31, 33
- Sous Vide Veal Tongue, 5-49, 50
- Sous Vide Vegetable Jus, 2-347
- Sous Vide Vegetable Stock, 2-303
- Sous Vide White Asparagus, 5-147, 149
- South Beach Diet, 1-242
- South Carolina BBQ Sauce, 5-66, 70
- South Carolina hospital food, AGS
system of vacuum packing for, 1-40
- Southern barbecue, hot-smoking and,
3-211
- soy, foaming agent in, 4-251
- soy curd. *See also* tofu
traditional method for, 4-102
- soy gels, parametric recipe for,
4-116–117
- soy lecithin
de-oiled, for airs and froths,
parametric recipe for, 4-264
product guide for, 4-II–III
- soy milk
Frozen White “Truffle,” 3-400–401
Soy Milk, 4-58
- soy oil, hydrogenated, chemistry of,
2-126
- soy sauce
Passion Fruit-White Soy Sauce
Vinaigrette, 5-181, 183
smoking, parametric recipe for,
3-362
Soy Sauce Cloud, 4-299
Soy Vinegar Infusion, 5-253, 256
- soy yuba, 5-205
Abalone and Foie Gras Shabu-Shabu
with Yuba and Enoki, 5-197, 203
Green Pea Yuba, 4-115
- soybean oil, chemistry of, 2-126
- soybeans, allergies to, 1-238
- spaetzle, Sour Cream Spaetzle
(Csipetke), 4-117, 5-55, 59
- Spaghetti alle Vongole plated-dish
recipe, 5-229–231
- Spaghetti Carbonara, 3-384
- spaghetti squash, Marinated Spaghetti
Squash, 5-147, 149
- Spago, 1-29
- Spain
early gastronomy of, 1-10
Horchata drinks in, 4-59
influence on Western cuisine by, 1-14
Modernist cuisine in, 1-57
Nouvelle cuisine in, 1-28
- Spam, 1-21, 22–23
- sparkling white wine. *See also*
Champagne
Fizzy Grape Fluid Gel, 4-183
Oysters with Cava Foam, 4-277
- Sparta, Greece, military cuisine in, 1-12,
13
- species, in scientific naming system,
1-112
- specific heat
calculating efficiency using, 1-275
definition of, 1-266–267
heat capacity of cookware and, 1-278
how liquid nitrogen boils and,
science of, 2-457
measuring of, 1-268
- specific heat capacity
of common kitchen materials, 1-267
definition of, 1-266–267
- spectrum. *See also* emission spectra
heat rays on, 1-284
infrared, 1-287
- Spectrum diet, 1-242
- Spencer, Percy, 1-22, 2-182–183
- spheres, molding gel into, 4-135
- spherification, 4-184–195
Adrià's use of, 1-39, 4-184
alginate for, 4-127
best bets for, 4-187
with cryogenics, 4-184
direct, 4-130, 186
evolution of, 5-256
example recipes for, 4-188–195
hydrocolloid coagulation and, 4-70
melon juice beads due to, 4-48
parametric recipe for, 4-186–187
reverse, 4-187, 5-254
suspending solids in gelled spheres
and, 4-187
- spice mixes
Fish Spice Mix, 5-151, 154
Spice-Mix Emulsion, 5-151, 155
Sweet Spice Blend, 5-211, 212
- Spiced Ash, 5-17, 22
- Spiced Chili Oil, 2-330
- Spiced Honey Glass, 5-121, 123
- Spiced Walnut Vinegar Gel, 5-109, 111
- Spice-Mix Emulsion, 5-151, 155
- spices
for brining or curing, 3-158
medieval cuisine and, 1-12
in sausage, 3-226
seasonal mélanges with, 3-295
toasting, 5-94
trading, discovery of New World
and, 1-14, 3-197
- spinach
cooking
benefits of, 3-267
sous vide, parametric recipe for,
3-290
Creamed Spinach, 4-55
dehydrating, parametric recipe for,
3-366
E. coli O157:H7 outbreak of 2006
and, 1-169–170, 172, 195
puree of, parametric recipe for, 2-425
Spinach Paper, 3-369
- spinalis dorsi, in pork and beef, 3-15
- spirits. *See also* alcohol (ethanol); *specific*
alcoholic beverages
distillation of, 2-384, 390
production process for liquor and,
1-256
seasoning with, 2-317
- spit jacks for roasting, 2-28
- spit-roasting, 2-32–33
- spittle, human, contamination by, 1-116,
117
- spoilage bacteria, 1-133–134, 135

- sponges, cross-contamination and, 1-200
- spongiform encephalopathies, transmissible, 1-156–159
- sporadic Creutzfeldt-Jakob disease (sCJD), 1-157
- spores, bacterial, food spoilage and, 1-136, 138–141
- Spot Prawn and Lotus Root Tempura with Smoked White Soy Sauce, 5-197, 201
- Spot Prawns with Foie Gras Nage, 4-233
- spray dryer, example recipes for, 2-443
- Spray-Dried Blood Orange Juice, 2-443
- Spray-Dried Buttermilk, 2-443
- spray-drying
 - characteristics of, 2-438–441
 - equipment for, 2-285, 430
 - method for, 2-442
- spreads
 - cheese, parametric recipe for, 4-223
 - Olive Oil Spread, 4-51
- Spring Garlic Consommé, 5-85, 86
- spring-loaded valves, for pressure cookers, 2-86–87
- Square Mile Coffee, 4-396
- squash. *See also specific types of squash*
 - cooking sous vide, parametric recipe for, 3-289
 - dehydrating, parametric recipe for, 3-366
- Squash Glaze, 5-60, 63
- squid
 - biology of, 3-24
 - cooking sous vide, parametric recipe for, 3-108
 - scoring to tenderize, 3-56
 - in Seafood Paper, 3-188
 - Squid Sicilian Lifeguard-Style, 3-113
- squid ink
 - Squid Ink Fluid Gel, 4-131
 - Squid-Ink Bean-Sprout Risotto, 3-397
- Ssamjang Paste, 5-285, 287
- St. John, 3-142
- Staphylococcus aureus*, 1-135, 144–145
- star anise extract, parametric recipe for, 2-326
- star anise infusion, parametric recipe for, 2-310
- Starbucks, 4-398
- Starch-Infused Fries, 3-324
- Starch-Infused Ultrasonic Fries, 3-325
- starches, 4-20–37. *See also specific starches*
 - best bets for thickening with, 4-28
 - dispersion of, 4-20, 22
 - drying plants foods with, 3-365
 - in fermented sausage, 3-246
 - flavor release by, 4-11
 - foam forming with, 4-244, 247, 255
 - gelling agents from, 4-68, 69
 - hydration of, 4-22
 - modified. *See modified starches*
 - in plant foods, 3-280–283
 - plated-dish recipes for, 5-223–256
 - pregelatinized
 - as emulsion stabilizer, 4-215
 - thickening sauces, jus, or glazes with, 2-346
 - proprietary blends, sources of, 4-41
 - as thickeners, 4-5, 7, 13, 19
 - example recipes for, 4-29, 31–37
- starches (*continued*)
 - modern, parametric recipe for, 4-30
 - traditional, parametric recipe for, 4-28
- statins, heart disease and, 1-227
- statistical power, of nutritional studies, 1-220
- statistician, Gosset as, 4-251
- stators
 - in colloid mills, 2-413–414
 - in rotor-stator homogenizer, 2-413
- steaks. *See also beef*
 - cooked, fats in, 1-233
 - FDA Food Code on cooking, 1-174
 - in frying pan, cutaway illustration of, 3-72–73
 - vs. roasts, FDA Food Code on, 1-187
- steam. *See also autoclaves; bubbles; evaporation; steaming*
 - blanching using, 2-267
 - boiling and, 2-65, 68–69
 - burns from, 1-319, 2-154
 - condensing, heat transfer coefficient of, 1-283
 - in deep-frying, 2-115, 116–117, 118–119, 125
 - distillation, of essential oils, 2-318, 320
 - as foaming gas, 4-254
 - heat of vaporization of water and, 1-296
 - low-temperature, use of term, 2-155
 - in shallow frying, 2-127–128
 - as water phase, 1-300
 - zones of, 1-318
- steam mode
 - in combi ovens, 2-167
 - in CVap water-vapor oven, 2-158–159
 - in ovens, pros and cons of, 2-155–156
- steam wands
 - foam forming with, 4-258
 - to froth milk, 4-391
- Steamed Blancmange, 4-296
- Steamed Cod with Cod Roe Velouté, 4-32
- Steamed Live Spot Prawn, 5-181, 183
- Steamed Sticky Rice, 5-113, 119
- steaming, 2-70–73. *See also autoclaves; steam*
 - boiling vs., 2-72–73
 - chemistry of sweetness due to, 2-70
 - cutaway illustration of, 2-72–73
 - fog compared to, 2-71
 - hot-packing canning and, 2-77
 - as phase change, 1-290
 - in Western and Asian cooking, 2-70
- Steam'N'Hold vapor oven, 2-158
- stearic acid, 1-233, 234
- Steelhead Trout Confit with Fennel Salad, 3-106
- Stefan, Josef, 1-287
- Stefan-Boltzmann law, 1-285–286, 289
- Steingarten, Jeffrey
 - biography of, 1-65
 - on Chinese restaurant syndrome, 1-213
 - on hypermodern cuisine, 1-57
 - on oxalic acid in spinach, 3-267, 273
 - Potato Puree recipe, 3-296
- Stelvin screw top for wine, 4-344
- steric hindrance or resistance, 4-12
- sterilization, 1-148–149
 - in boiling-water canning, 2-79–80
 - canning and, 2-76
- sterilization (*continued*)
 - modern confit preparation and, 2-128
 - pasteurization vs., 2-249–250
 - in pressure-canning, 2-85, 88
 - time to temperature using pressure-canning for, 2-89
- Stewart Brothers Coffee, 4-398
- stewing, 2-96–98. *See also braising*
 - cutaway illustration of, 2-96–97
 - pot-roasting or braising vs., 2-93
- stiffness, gel selection and, 4-73
- Stir-Fried Fiddlehead Ferns, 5-113, 119
- stir-frying, 2-48–57. *See also woks*
 - bao technique for, 2-54–55
 - burners for, 2-48, 52, 56–57
 - chao technique for, 2-54, 56–57
 - cutaway illustration of, 2-50–51, 56–57
 - heat transfer in, 2-48
 - seasoning woks or frying pans for, 2-53
- stirred baths, for sous vide cooking, 2-234
- stirring. *See also magnetic stirring bar*
 - boundary layer and, 1-283
 - before poaching eggs, physics of, 2-67
- Stockfleth's method, for grooming
- espresso, 4-381
- stocks
 - aromatics for, 2-298
 - brown
 - Brown Beef Stock, 2-301
 - Brown Butter Fumet, 5-157, 158
 - Brown Veal Stock, 2-300
 - rich, parametric recipe for, 2-297
 - Rich Brown Stock, 2-297
 - concentrating flavor of, 2-380
 - cooling of, 1-206
 - example recipes for, 2-300–301, 303
 - flavor extraction for sauces and, 2-288
 - freeze-drying, parametric recipe for, 2-451
 - Onion Stock, 5-261, 264
 - Paella Stock, 5-239, 240
 - parametric recipe for, 2-296–298
 - Pressure-Cooked White Chicken Stock, 2-301
 - pressure-cooking, 2-294–295
 - how to, 2-293
 - Ramen Stock Powder, 2-455, 5-247
 - shellfish, parametric recipe for, 2-297
 - Shellfish Stock, 2-297
 - size of ingredients and flavor of, 2-290–292
 - sous vide
 - Sous Vide Fish Stock, 2-303
 - Sous Vide Vegetable Stock, 2-303
 - vacuum filtering of, 2-354
 - white
 - parametric recipe for, 2-297
 - White Stock, 2-297
- stomach
 - characteristics and cooking of, 3-142–143
 - as sausage binder, 3-222
- stove top. *See also burners*
 - braising and pot-roasting using, 2-96
 - how heat is lost from, 1-276
 - hydrating thickeners on, 4-26
 - for Modernist kitchen, 2-287
 - pot on. *See pots, on stove*
 - reductions, 2-346, 379
 - stove-top smokers, 2-146
- straining, for filtering, 2-351, 353
- strawberries
 - compressing, parametric recipe for, 3-390
 - dehydrating, parametric recipe for, 3-366
 - freeze-drying, parametric recipe for, 3-372
 - heat-treating, parametric recipe for, 3-359
 - impregnating, parametric recipe for, 3-390
 - Piquillo Pepper and Strawberry Salad, 5-277, 278
 - Pressure-Cooked Polenta with Strawberry Marinara, 4-50
 - Seared Strawberry, 5-277, 279
 - Strawberry Consommé, 5-277, 278
 - Strawberry Gazpacho, 5-277, 278
 - Strawberry Milk Shake, 2-473, 5-11
 - strawberry chips, parametric recipe for, 3-328
- stress, slaughterhouse practices and, 3-34
- stretching phase, in milk steaming, 4-391
- strong coffee, brewing and, 4-364
- Stuffed Clam, 5-229, 231
- Stuffed Morels, 5-113, 117
- Stuffed Smoky Braised Eggplant, 5-99
- Stupak, Alex
 - Aerated Coffee Ice Cream recipe, 4-312
 - Pistachio Puree recipe, 2-427
 - Whipped Cheese recipe, 4-272
- sturgeon
 - cooking sous vide, parametric recipe for, 3-102
 - Heather-Smoked Sturgeon, 5-233, 235
 - Heather-Smoked Sturgeon Rillettes, 5-233, 235
- “Styrofoam” Cup and Lid, 5-247, 248–249
- Subijana, Pedro, Eggs Benedict recipe, 4-86
- sublimation
 - of aromatic compounds in frozen foods, 2-261
 - carbonating liquids and, 2-464
 - critical temperature for freeze-drying and, 2-446
 - deposition vs., 1-329
 - dry ice and, 1-326
 - evaporative cooling due to, 2-446
 - in freeze-drying, 1-328, 2-444, 3-365
 - in freezers, 1-326
 - heat of, 1-326
 - of ice, 1-326
 - solid transmission to gas as, 1-326–329
 - of water, 1-326–329
- subspecies, 1-132
- succulence, cooking meat and seafood and, 3-83–84
- suckling pig
 - cooking sous vide, parametric recipe for, 3-96, 109
 - Suckling Pig Shoulder with Shallot and Orange Sauce, 3-110
- Sucro, for airs and froths, parametric recipe for, 4-264
- sucrose
 - centrifuging and, 2-368

T

- sucrose (*continued*)
 for cold gels, parametric recipe for, 4-140
 GRAS criteria and, 1-254
- suction pump, vacuum filtration and, 2-354
- Suet Mousseline, 5-5, 8
- sugar preserves, parametric recipe for, 3-349
- sugar syrup, cooking fruits or vegetables sous vide in, 3-291
- sugar-glass foams
 carbon dioxide for, 4-254
 Modernist cuisine and, 4-255
- sugars
 converting grams to volumes for, 5-XXXVII–XXXVIII
 dissolving in water, 1-296
 drying with, 2-430, 3-344
 for edible films, parametric recipe for, 4-60
 freeze-drying and, 2-447
 freezing-point depression and, 1-305
 for juicing, 2-335
 organic food movement perception of, 1-253
 production process for, 1-256
 refining process for, 1-254
 in sausage, 3-226
 for set foams, parametric recipe for, 4-288–289
 solids, as foam stabilizer, 4-257
 solubility in water of, 1-331, 332
 spherification and, 4-184
 supersaturated solution of, 1-332
 for thick foams, parametric recipe for, 4-278–279
- Sugimoto, Tagashi, Green Pea Yuba recipe, 4-115
- sulfites
 drying plant foods with, 3-365
 fresh juice color and, 2-338
 intolerance to, 1-239
- sulfur dioxide, cork taint in wine and, 4-348–349
- Sullivan, Geneva, 4-399
- summer squash, cooking sous vide, parametric recipe for, 3-289
- sunchokes
 cooking sous vide, parametric recipe for, 3-289
 Jerusalem Artichoke Pudding, 4-31
 Pickled Jerusalem Artichokes, 5-125, 131
 puree of, parametric recipe for, 2-425
- Sunday Pork Belly plated-dish recipe, 5-101–105
- sunflower oil, chemistry of, 2-126
- Sunny-Side Up “Eggs,” 4-148–149
- sunny-side up eggs, process for, 4-74
- super methylcellulose (SMC), for cellulose gum gels, parametric recipe for, 4-170, 171
- supercooled liquids, 1-304
 how to supercool water and, 1-312
- supercritical fluids
 critical point and, 1-328
 extraction of
 decaffeinated coffee and, 4-363
 flavor and, 2-320
 as gas and liquid, 1-302–303
 supersaturated solutions, 1-332
 surface area, volume ratio to, 2-288
- surface tension
 of bubbles, 4-246
 of water, hydrogen bonds and, 1-296, 298
- surfactants
 emulsifiers as, 4-202
 as foaming agent, 4-244
 HLB values and, chemistry of, 4-204
 in oil used for deep-frying, 2-123
 for stabilizing emulsions, 4-214
- Surger, in Guinness beer bottles, 4-251
- surgical tweezers, for cooking, 1-197
- surimi, 3-251, 388
- susceptible populations
 foodborne illnesses and, 1-174, 191
 warnings for, 1-178, 182
- sushi
 anisakid infections and, 1-122–123
 flash-cooking, how to, 3-61
 nigiri, how to slice fish for, 3-60
 tapeworms and, 1-124
- suspending solids in gelled spheres, 4-187
- sustainable food
 current buzz on, 1-248
 New American cuisine and, 1-28
- Swatland, Howard, 3-44
- Swedish hospital food, sous vide technology and, 1-40, 2-252, 265
- Sweet, Sour, and Savory Glaze, 5-43, 44
 sweet cure, basic, parametric recipe for, 3-169
- sweet Italian sausage, parametric recipe for, 3-236–237
- Sweet Onion Salsa, 5-175, 177
- Sweet Pea and Young Ginger Fricassee, 5-273, 275
- Sweet Pea Clusters, 4-173
- Sweet Pea Fricassee plated-dish recipe, 5-272–275
- Sweet Pea Wafer, 3-371
- sweet peas. *See* green peas
- Sweet Potato Fondant, 5-35, 39
- sweet potatoes
 cooking sous vide, parametric recipe for, 3-292
 necrotizing enteritis and, 1-141
 Sweet Potato Fondant, 5-35, 39
 Yogurt Foam and Sweet Potato Chips, 4-287
- Sweet Spice Blend, 5-211, 212
- sweet spot or zone
 of broilers, 2-18–19, 22–23
 of grills, 2-14–17
 roasting and, 2-32
- sweet vinegar pickles, parametric recipe for, 3-349
- Sweet-and-Sour Cipolline Onions, 5-17, 19
- sweetbreads
 brining, parametric recipe for, 3-172
 characteristics and cooking of, 3-140
 cooking sous vide, 3-146
 parametric recipe for, 3-146
 Crispy Sweetbreads, 3-150
 definition of, 5-32
 Sous Vide Sweetbreads, 5-31, 32
 Sweetbreads with Sour Mango Powder and Shiitake, 3-151
- sweeteners. *See also specific sweeteners*
 volumetric equivalents for amounts of, 5-XLIV
 water content of, 5-XLI
- sweetness, chemistry of steaming and, 2-70
- Swiss cheese
 The American Cheese Slice, 4-224
 scombroid poisoning and, 1-139
- swordfish, cooking temperature for, 3-83
- Sybaris, Greece, culinary inventions protected in, 1-12, 13
- syneresis
 freeze filtration and, 2-369, 370–371
 gel failure due to, 4-67
 modern thickeners and, 4-5
 thickener selection and, 4-15, 17
- synergy
 gelling agents and, 4-72
 thickeners and, 4-16
- Synesso espresso machine, 4-372, 374, 375, 398, 400
 Cyncra model of, 4-401
- Synsepalum dulcificum*, 2-465
- synthetic corks, for wine bottles, 4-344, 345, 346
- syrups
 converting grams to volumes for, 5-XXXVII
 maple, grades of, 5-77
 Maple Vinegar Gastrique, 5-125, 128
 Miang Syrup, 5-189, 191
 sugar, cooking fruits or vegetables sous vide in, 3-291
 White Grape Syrup, 4-52
- Système International d’Unités*, 1-272
- table salt. *See* salt (sodium chloride or table salt)
- Taenia saginata*, 1-124
- Taenia solium*, 1-124
- Tagine Base, 5-135, 137
- Tailor, 1-67
- tails, in distillation, 2-384
- Takazawa, Yoshiaki, 1-70
 aesthetics of nature in dishes of, 4-37
- Talbot, H. Alexander
 Aerated Gruyère and, 4-312
 agar for clarifying liquids and, 2-372
 on blanching sous vide, 3-293
 on browned solids from clarified butter, 4-212
 chicken skin glued to scallops by, 3-252
 Compressed Melon Terrine recipe, 3-392
 on cooking whole chicken eggs, 4-75
 fast hot-spring eggs and, 4-78
 fish skin pillows of, 3-131
 gel filtration and, 2-369
 Goat Cheese Dumplings recipe, 4-105
 Ideas in Food blog and, 1-66, 67
 Modernist Béchamel and, 4-31
 Pasta Marinara recipe, 3-386
 Pulled Mushroom recipe, 3-396
 smoked eggs by, 4-100
 Whipped Yogurt Crisps recipe, 4-292
- tamago, example recipe for, 4-94
- tamarind
 as acidifier, 2-314
 Tamarind Paste, 5-43, 99
 Tamarind Puree, 5-281, 282
- tampers, for espresso, 4-383–384
- tamping, of espresso portafilters
 considerations for, 4-383–384
 dosing and, 4-380
 how to, 4-382
 pressure-controlled, 4-398
- tannic acid, acorn cooking by Native Americans and, 1-6
- tannin, in red wine, reducing, 4-334
- tapenade, Seaweed Tapenade, 5-25, 27
- tapeworms, 1-124–125
 contamination by, 1-120
 destruction of, 1-123
 types of, 1-124
- tapioca
 Pickled Tapioca Pearl, 5-205, 207
 Pregelatinized Starch Paste, 4-29
 Uni with Whipped Tofu and Tapioca, 4-285
- tapioca starch, 4-20, 21, 28, 68
 source of, 3-376
 thickening with, parametric recipe for, 4-28
- tapioca starch cracker
 parametric recipe for, 4-302
 Tapioca Starch Cracker, 4-303
- tarbais beans, Pressure-Cooked Tarbais Beans, 5-81, 83
- target core temperature
 holding food at, 2-247–249
 water bath hotter than, 2-243–247
 water bath set to, 2-243–245

- tarragon infusion, parametric recipe for, 2-310
- tart, Onion tart, 5-261–265
- tartar sauce, Sea Urchin Tartar Sauce, 5-143, 145
- tartares, 3-62–69
example recipes for, 3-65–68
- tartaric acid
as acidifier, 2-314
for cold gels, parametric recipe for, 4-140
for set foams, parametric recipe for, 4-288–289
- tastants
ethanol for extraction of, 2-320
Maillard reaction and, 2-268
- taste buds
research on, 4-341
sour-sensing, carbonation taste and, 2-465
- taste testing
of confit, 2-129
ratings and gold medals for wine and, 4-338–339
science of, 2-299
triangle test for, 2-129, 4-334
how to set up, 4-336
of wine, 4-330, 332, 334
- Taubes, Gary, 1-236
- TCA (2,4,6-trichloroanisole), 4-348, 349
- TDS (total dissolved solids), brewing control chart on, 4-367–368
- tea
Cryopoached Green Tea Sour, 4-291
hot and cold, 4-176
Hot and Cold Tea, 4-176, 182
infusion of, parametric recipe for, 2-310
- Techamuanvivit, Pim, Pad Thai recipe, 3-385
- technoemotional cuisine, Adrià on
Modernist cuisine as, 1-37, 57
- temperature. *See also* energy; heat; low-temperature cooking; radiation (radiant heat)
for Activa bonding, 3-252
bacterial replication rates and, 1-142–143, 144
during baking, 2-103, 106
barbecue sous vide and, 3-216
blowing on hot food and, physics of, 1-288
of boiling water, 1-318. *See also* boiling point
carbonated liquids and, 2-464
for coffee brewing, 4-364, 368
coffee grind and, 4-376, 378
coffee roasting and, 4-360–361
color indicators for, physics of, 1-291
consistency in results and, 2-111
controlling of, 1-270
conversion tables, 5-XXXIV–XXXV
cooked meat and seafood flavor and, 3-88–89
for cooking, animals' body temperature and, 3-89
core. *See* core temperature
critical
bacterial replication rates and, 1-142–143
for freeze-drying, science of, 2-453
freeze-drying and, 2-444, 446
- temperature (*continued*)
“danger zone,” 1-175–179
defining, history of, 1-265
definition of, 1-264
dry-bulb. *See* dry-bulb temperature
for drying with warm air, 2-432
egg textures and, 4-76–77
emulsifier solubility and, 4-203
for espresso-brewing, 4-372, 374
skill of choosing, 4-385
factors in, 4-15
for fat incorporation into sausage, grinding and, 3-224
FDA Food Code on, 1-174
fermented sausage-making and, 3-246
flavor of cooked meat and seafood and, 3-88–89
food safety rules based solely on, 1-174
food safety rules on, 1-169
fourth-power relationship of radiant heat to, 1-285–286, 287
for freeze-drying, 3-365
freezing point and. *See* freezing point
for gelatin melting, 4-67–68
for gelatinization, 4-22
glass-transition, in freeze-drying, 1-329, 2-44, 444
grinding fat to incorporate into sausage and, 3-224
for grinding meat, 3-230
heat and, 1-264–271
for heat-shocking, 3-358
holding. *See* holding temperature
hydrocolloid hydration and, 4-38
irreversible changes and, 1-268, 270
lower, deep-frying with, 2-122
lowering. *See* chilling; chilling water baths; cook-chill sous vide methods; cooling; freezing; refrigeration; refrigerators
low-temperature cooking and. *See* low-temperature cooking; target core temperature
low-temperature steam mode and in combi ovens, 2-167
in CVap water-vapor oven, 2-158, 159
ovens using, 2-155
Maillard reaction and, 3-89–90
management of, 1-95
measuring, technology of, 1-269
measuring during baking, 2-108
for meat grinding, 3-230
in *Modernist Cuisine* recipes, 1-96
of oil for deep-frying, 2-116, 122, 123, 127
for plant food cooking, 3-286
plant food flavor and, 3-273
resistance to change in, properties of, 1-267
scales for, 1-266, 285–286
serving
brewed coffee and, 4-364
gel selection and, 4-73
thickener selection and, 4-14–15
for slicing raw meat, 3-50
for smoking, 2-132, 140–141, 3-208, 211
chemistry of, 2-135
sous vide cooking and, 2-230–231
- temperature (*continued*)
specific heat and, 1-267–268
spray-drying and, 2-438
in steak frying, 3-72–73
time and
bacterial death and, 1-148, 150–151
noroviruses and, 1-154
for vacuum packing, 2-214
viscosity and, 4-6
wet-bulb. *See* wet-bulb temperature
for wine storage, 4-345–346
for wok burners, 2-52
“The Ten Commandments of Nouvelle Cuisine,” 1-26, 27
- tender cuts of meat
collagen and, 3-10, 70, 76, 81
cooking sous vide
best bets for, 3-96
example recipes for, 3-97–98
parametric recipes for, 3-96
medium-tender, from primal cuts, 3-44
muscles and, 3-6
contraction of, 3-8–9
plated-dish recipes for, 5-3–39
very tender, from primal cuts, 3-44
- tender cuts of poultry
cooking sous vide
example recipes for, 3-100–101
parametric recipes for, 3-99
Pigeon with Shellfish Butter, 3-100–101
- tender fish, cooking sous vide, parametric recipe for, 3-102
- tender greens, freeze-drying, parametric recipe for, 2-451
- Tenderay process for dry-aging meat, 3-41, 78
- tenderizers, Jaccard. *See* Jaccard tenderizers
- tenderizing
with acid, 3-192–193
equipment for, 2-286
blade tenderizing and, 3-51. *See also* Jaccard tenderizers
for Modernist kitchen, 2-286
FDA Food Code time and temperature for, 1-176
mechanical, of meat, 3-50–51
food safety and, 1-191
foodborne illnesses and, 1-176
muscle structure and, 3-10
multiple water baths and, 2-247–249
with penetrating meat tenderizers, hazards of, 1-176
- tenderloin, cooking sous vide, 2-248
- tepid-water baths, thawing using, 2-263
- Terranova decipens*, 1-122–123
- terrines
Compressed Melon Terrine, 3-392
Hot Applesauce Terrine, 5-101, 103
terrine de foie gras, Pralus, Troisgros and, 1-41, 42
- terroir, wine and, 4-322–325
- tetradecahedron, foam geometry as, 4-246
- tetrasodium pyrophosphate, myosin extraction for sausage and, 3-223
- Texturas, sources of, 1-35
- texture
cook-chill sous vide method and, 2-252
deep-frying and, 2-122, 124, 125, 127
- texture (*continued*)
of eggs, temperature and, 4-76–77
of foams, expanding by drying and, 2-433
freezing and, 1-304, 2-256
gelling with hydrocolloids and, 4-124
holding at target temperature and, 2-242, 247–248
hydrocolloid-texture combinations, overview of, 4-VII
marinades and, 3-190
oven humidity and, 2-153
of pasta dough, 3-378
of plant foods, modifying, 3-374–401
progressive smoking and, 2-148
searing after sous vide cooking and, 2-268
smoking and, 2-138, 140, 141, 143
sous vide preparation and, 2-195, 197, 198
sterilization for canning and, 2-76
thawing and, 1-313
vacuum packing and, 2-213, 221
water bath hotter than target temperature and, 2-245
- Thai chicken sausage, parametric recipe for, 3-236–237
- Thai Crab Miang plated-dish recipe, 5-189–191
- Thai stock, parametric recipe for, 2-296–297
- Thanksgiving Turkey Gravy, 4-33
- thawing
cooking directly from frozen vs., 1-313, 2-258, 262, 263
debate on, 1-313
heat conduction in ice and, 1-311
strategies for, 2-263
timing for, 2-264
- The Curious Cook* (McGee), 1-43
- The Theory of the Avant-Garde* (Poggioli), 1-18
- thermal conductivity, heat transfer efficiency and, 1-277
- thermal death curves
for bacteria, 1-149, 150–151
FDA assumptions on, 1-182–189
- thermal inactivation curves, for viruses, 1-153
- thermistor, technology of, 1-269
- thermocouples
of freeze dryers, 2-446
technology and types of, 1-269
for testing pressure-canning process, 2-88
- thermo-irreversible gels
gel selection and, 4-70, 73
set foams as, 4-244
- thermometers
accuracy by type of, 1-269
accuracy issues with, 1-206–207
digital. *See* digital thermometers
infrared, 1-269, 2-286
low-temperature cooking and, 1-205
for Modernist kitchen, 2-286
- Thermomix
dispersing thickeners with, 4-24, 25
hydrating thickeners with, 4-26
- thermo-reversible gels
gel selection and, 4-70, 73
methylcellulose for, 4-127
- thermos bottles, for sous vide cooking, 2-241

- thermostats
 calibration of, 2-112
 of conventional ovens, 2-111
 of sous vide cookers, 2-230–231
- thick foams, 4-278–287
 best bets for, 4-278
 example recipes for, 4-280–287, 5-193
 parametric recipe for, 4-278–279
- thick food
 cryogenic freezing and, 1-308, 310
 frozen, thawing of, 1-311
- thickened hot and cold liquids,
 parametric recipe for, 4-46–47
- Thickened Oil, 4-230
- thickeners, 4-3–63. *See also* thickening
 dispersing, how to, 4-24
 emulsion stability and, 4-202, 204
 emulsion viscosity and, 4-205
 flavor release and, 4-10–11
 foam stabilizing with, 4-245
 hydrating, how to, 4-26
 measuring, how to, 4-23
 mouthfeel and, 4-6, 10
 for oil, 4-13
 proprietary blends, sources of, 4-41
 starches as, 4-20–37
 traditional, 4-7
 viscosity and, 4-3–4
 technology of measuring, 4-8
- thickening. *See also* thickeners
 chemistry of, 4-71
 common problems with, 4-27
 emulsification for, 4-205
 methods for, 4-12–13
 modern methods of, 4-18–19
 of sauces, jus, and glazes, 2-346
 strategies for, 4-14–19
- This, Hervé
 biography of, 1-46
 Chocolate Chantilly recipe, 4-281
 Ericc Conferences and, 1-44, 45
 food science and, 1-52
 hot spring eggs and, 4-75
 liquid nitrogen and, 1-61–62, 65
 on molecular gastronomy, 1-46, 47–48
 Pickled Quail Eggs recipe, 4-83
 Steingarten on, 1-65
- Thomas, Dave, innovations of, 1-21, 22
- Thomas, Elizabeth Cawdry, 1-44–45
- Thompson, Bradford, Preserved Lemons recipe, 3-350
- Thompson, David
 miang kham of, 5-189
 Thai chicken sausage and, 3-236–237
- thyme, antimicrobial properties of wine and, 1-145
- thyme extract, parametric recipe for, 2-326
- thymol, as antimicrobial compound, 1-145
- thymus gland, 5-32. *See also* sweetbreads
 characteristics and cooking of, 3-140
- TIC Gums, 4-40
- Tierno, Philip, 1-196, 200
- tigernuts
 Horchata (Chufa Milk), 4-59
 Horchata Foam, 5-239, 244
- tilapia, Microwaved Tilapia with Scallions and Ginger, 3-115
- Tim Wendleboe, 4-396, 400
- time
 for brining, 3-156
 FDA Food Code omission from standards of, 1-174
 for plant food cooking, 3-286
 power as unit of, 1-272–273
 temperature and
 bacterial death and, 1-148, 150–151
 FDA Food Code errors in, 1-183
 noroviruses and, 1-154
- tinctures
 best bets for using, 2-325
 flavors in, 2-320
- TMAO (trimethylamine oxide), 3-43, 87
- Toasted Almond Milk, 4-59
- Toasted Garlic Chips, 5-5, 9
- Toasted Oat Jus, 5-126, 133
- Toasted Rice Milk, 4-59
- toasting spices, 5-94
- Toddy system, for cold-extraction coffee, 4-370
- tofu
 Burmese Chickpea Tofu Laksa, 4-121
 Firm Tofu, 4-112
 Instant Tofu Noodles, 4-172
 parametric recipe for, 4-104
 Peanut “Tofu,” 4-122
 as protein gel, 4-102
 Sea Urchin Tofu, Tokyo Negi, Sesame, Ponzu, 5-197, 202
 Silken Tofu, 4-113
 Uni with Whipped Tofu and Tapioca, 4-285
- tofu gels, example recipes for, 4-112–113, 115, 121
- Tom Yum Broth, 2-309
- tomato chips, parametric recipe for, 3-328
- tomatoes. *See also* green tomatoes
 as acidifier, 2-314
 Chili Tomato Spice Blend, 2-403
 Compressed Tomato, 5-11, 15
 compressing, parametric recipe for, 3-390
 cooking sous vide, parametric recipe for, 3-290
 freeze-drying, parametric recipe for, 3-372
 heat-treating, parametric recipe for, 3-359
 impregnating, parametric recipe for, 3-390
 introduction and acceptability of, 1-14, 16
 Mackerel with Spicy Tomato Skin, 4-175
 Pasta Marinara, 3-386
 pH level and canning method for, 2-76
 preserving, parametric recipe for, 3-348
 Pressure-Cooked Polenta with Strawberry Marinara, 4-50
 sauces from fresh vs. canned, 3-276
 Tomato Confit, 5-11, 55, 60, 62, 67
 Tomato Powder, 3-312
 Tomato Spheres with Basil Oil, 4-192
 Tomato Vinegar Foam, 5-60, 65
 Tomato Water, 2-366, 5-5, 60
 Tomato Whey Broth, 4-49
- tongue (animal). *See also specific animals*
 characteristics and cooking of, 3-140–141
- tongue (human), taste regions of, 2-465, 4-341
- tools. *See also specific tools*
 classic, 2-287
 cutting, for frying fruits and vegetables, 3-326–327
 for emulsions, 4-208
 handy special-purpose, 2-285
 inexpensive but valuable, 2-286
 for meat chopping, grinding, or cutting, 3-230–233
 must-have, 2-284
 technology and, 2-283, 286
- torches. *See* blow torching and blowtorches
- total dissolved solids (TDS), brewing control chart on, 4-366–367
- Tough, Dana, Modernist raviolo al’uovo of, 4-190
- tough cuts of meat
 collagen and, 3-10–11, 70, 76, 81
 cooking sous vide, best bets for, 3-109
 example recipes for, 3-110, 111, 114
 muscles and, 3-6
 contraction of, 3-8–9
 parametric recipes for, 3-109
 plated-dish recipes for, 5-41–105
 pressure-cooking for quick results, how to, 3-114
 from primal cuts, 3-44
 sous vide cooking of, 3-95
 succulence of, 3-84
- tough cuts of poultry, parametric recipes for, 3-108
- tough fish, example recipes for, 3-115
- tough shellfish
 best bets for, 3-108
 example recipes for, 3-112, 113
 parametric recipes for, 3-108
- Toulousain Garlic Sausage, 5-81, 82
- Toulouse goose, foie gras production in, 3-138
- Tower, Jeremiah, New American cuisine and, 1-28
- toxins
 bacterial, 1-134–135
 in cassava, 3-262
 chemistry of, 1-248
 in distilled essences, 2-391
 historical cooking and, 1-6
 natural, 1-249
 organically grown food and, 1-245
 in plants, 3-267
 as self-defense, 3-266
 in reused deep-frying oil, 2-124, 125
 in seeds, 3-262
- Toxoplasma gondii*
 foodborne illnesses in U.S. and, 1-111, 126–127
 human infections from, 1-128
 life cycle of, 1-127
 misconceptions about, 1-118
 psychological conditions due to, 1-127
- trade, long-distance, civilization and, 1-7
- trade secrets, history of, 1-76
- traditional cooking, 2-2–149
 baking and, 2-100–113
 boiling and, 2-62–69
 broiling and, 2-18–27
 canning and, 2-74–91
 covered sautéing and, 2-58–61
 grilling and, 2-6–17
 Myhrvold on writing about, 1-84–85
 myth of, 1-14–16
 in oil, 2-114–131
- traditional cooking (*continued*)
 panfrying a la plancha and, 2-36–43
 pot-roasting and stewing and, 2-92–99
 roasting and, 2-28–35
 sautéing and, 2-44–47
 smoking and, 2-132–149
 steaming and, 2-70–73
 stir-frying and, 2-48–57
- traditional plant foods,
 internationalization of, 3-268
- Traeger smoker, 2-147
- Tragacanth Importing Company, 4-40
- Tramonto, Rick, Trotter and, 1-69
- trans fat, 1-222, 224, 230–231
- transglutaminase. *See also* Activa
 as coagulating enzyme, 4-70
 description of, 3-250–251
 gelling with, best bets for, 4-116–117
- transglutaminase gels, parametric recipe for, 4-116
- traveler’s diarrhea, 1-129
- trehalose, as bulking agent with spray-dried powders, 2-442
- trematodes, 1-123–124
 disease caused by, 1-120
 liver flukes, 1-123–124
 salmon-poisoning fluke, 1-124
- trials. *See* double-blind trials; randomized clinical trials
- Trials of Hypertension I and II, 1-234
- triangle tests
 how to set up, 4-336
 for taste testing, 2-129
 of wine, 4-334
- Trichinella spiralis*
 contamination of meat by, 1-117–118, 120–122, 179
 as flesh-dwelling parasite, 1-174
 invasive infection by, 1-120–121
 misconceptions about, 1-179
 overstated risk of exposure to, 1-170
- trichinellosis
 common misconceptions about, 1-117–118, 121–122
 deaths due to, 1-113
 as disease name, 1-119
- triglycerides, 1-222
- Trillin, Calvin, 1-28
- trimethylamine oxide (TMAO), 3-43, 87
- tripe
 characteristics and cooking of, 3-141–143
 cooking sous vide, parametric recipe for, 3-146
 as sausage binder, 3-222
 texture of, 3-137
- Triple Dungeness Crab and Pork Stock Infusion, 5-253, 254
- triple point
 phase changes and, 1-326
 in phase diagrams, 1-302–303
- triple stocks, 2-290
- Troisgros, Jean-Baptiste, 1-25
- Troisgros, Michel, 1-25
 Cocoa Nib Curd recipe, 4-105
- Troisgros, Pierre and Jean, 1-25, 41, 73
- trompe l’oeil dishes, 3-388–401
- Trotter, Charlie
 fine cuisine in Chicago and, 1-69
 New American cuisine and, 1-28, 29
 Quail with Apple-Vinegar Emulsion and Water Chestnuts recipe, 3-101

T TROUT

- trout
- blue, science of, 3-40
 - cooking sous vide, parametric recipe for, 3-102
 - diet and flesh color of, 3-93
 - Steelhead Trout Confit with Fennel Salad, 3-106
- Tru, 1-69
- truffles
- Black Truffle Concentrate, 2-427, 5-216
 - Cromesquis, 3-340
 - faux
 - Dacosta on, 2-459
 - Frozen White “Truffle,” 3-400–401
 - Milk Skin with Grilled Salsify and Truffle Puree, 4-114
 - Pecorino with Truffle Honey on Cedar, 4-101
 - preserving freshness of, 2-470
 - smelling, science of, 4-350
 - storing with dry ice or gas-flushing vacuum sealer, 2-471
 - Truffle Jus, 4-53
 - Venison Loin Rossini, 3-98
- truite au bleu, science of, 3-40
- tubers. *See also specific tubers*
- gelling agents from, 4-126
 - Horchata drinks from, 4-59
- tuiles, Soccarat Tuile, 5-239, 245
- tularemia, 1-138
- tulip pattern, for caffè lattes, 4-395
- Tully’s, 4-398
- tumblers, vacuum, 2-285, 3-158, 166–167, 175
- tumbling meat, 3-50–51
- tuna
- Adrià’s use of intervertebral pads of, 1-36
 - albacore, about, 5-176
 - bigeye, as alternative to bluefin, 3-55
 - blocking, 3-54–55
 - bluefin. *See* bluefin tuna
 - Broiled Tuna Belly with Montpellier Butter, 4-220
 - cooking sous vide, parametric recipe for, 3-102
 - cooking temperature for, 3-83
 - cutting, 3-52
 - red and fatty flesh of, biology of, 3-21
 - Tuna and Escolar Checkerboard, 5-175, 176
 - Tuna Ribbons with Ginger Marmalade, 3-202
 - yellowfin, about, 5-176
- tuna bottarga, in Sea Urchin Bottarga, 5-226
- TurboChef microwave and convection oven, 2-189
- turbot
- aging effects on, 3-40
 - cooking sous vide, parametric recipe for, 3-102
 - Turbot with Onion and Marrow Broth, 3-105
- turkey
- baked, cutaway illustration of, 2-104–105
 - brining, parametric recipe for, 3-172
 - Clostridium perfringens*-contaminated, 1-139, 141
 - cooked, pink color in, 3-94
 - turkey (*continued*)
 - cooking sous vide, parametric recipe for, 3-99, 108
 - fast-twitch vs. slow-twitch muscle in, 3-12
 - Turkey Wing, 4-33
 - Turkey & Gravy seasonal flavor, 4-33
 - Turner, Joseph Mallord William, 1-33
- turnips
- Braised Turnips with Saffron, 5-121, 123
 - cooking sous vide, parametric recipe for, 3-289, 290, 292
 - preserving, parametric recipe for, 3-348
 - Root Vegetable Jus, 5-161, 163
 - Root Vegetable Risotto, 3-309
 - in Sauerkraut, 3-351
 - Sous Vide Root Vegetables, 5-49, 53
 - Sous Vide Turnip, 5-31, 33
- tweezers, surgical, for cooking, 1-197
- 12D drop, in bacteria for sanitizing food, 1-148, 149
- Two-Meter Parmesan Spaghetti, 4-143
- Tyndall effect, 4-72, 203
- U
- U.K. Institute of Food Research, 1-147
- ullage
- wine corks and, 4-344
 - wine storage temperature and, 4-345
- ultracold deep freezers, sous vide cooking and, 2-259
- Ultracrisp Chicken Crown, 3-134–135
- ultrahigh-pressure homogenizers
- for Modernist kitchen, 2-284
 - for reducing particle size, 2-398, 400
 - for wet-grinding, 2-414, 422–423
- ultrasonic baths
- for extracting and infusing flavors, 2-251
 - for kitchen hygiene, 1-204
 - for Modernist kitchen, 2-285
- Ultrasonic Fries, 3-325, 5-11
- ultrasonic homogenizers
- breaking down food with, 2-400
 - emulsifying with, 4-208
 - foam forming with, 4-252
 - freezing clear cubes of ice with, 1-333
 - wet-grinding with, 2-414–415
- Ultra-Sperse 3, thickening with, 4-22, 30
- parametric recipe for, 4-30
- Ultra-Sperse 5, for thick foams, parametric recipe for, 4-278–279
- Ultrastable Beurre Blanc, 4-219
- Ultra-Tex 8, thickening with, 4-22, 30
- parametric recipe for, 4-30
- ultraviolet radiation
- heat and emission of, 1-287
 - to kill bacteria, 1-149
 - prions and, 1-157
 - for purifying water, 1-335
 - ultraviolet light kits for sterilizing and, 1-205
 - ultraviolet lotion or powder and, hand washing and, 1-201
- umami brine, parametric recipe for, 3-168
- umami flavor
- MSG and, 3-160
 - ripening cured meat or seafood and, 3-167
- Umami Seasoning Fluid Gel, 4-183
- uncooked foods. *See* raw foods; *specific foods*
- Under Pressure* (Keller), 1-73, 83
- Uni with Whipped Tofu and Tapioca, 4-285
- United Kingdom. *See also* England
- mad cow disease in, 1-156, 160
 - Nouvelle cuisine in, 1-28
 - Roux and sous vide cooking in, 1-41
- United States
- Certified Angus Beef in, 3-39
 - laws of. *See also* U.S. Food and Drug Administration
 - on advertising and label health claims, 1-214
 - on distillation, 1-94, 2-384, 391
 - on food safety, 1-165, 190
 - local, for laboratory equipment, 1-94
 - Modernist cuisine in, 1-67
 - Nouvelle cuisine in, 1-27
 - regional barbecue specialties in, 3-218–219
- unsaturated fat, 1-222
- unsaturated oils, flavor of saturated oils vs., 2-126
- urban populations, civilization and, 1-7
- U.S. Centers for Disease Control and Prevention (CDC)
- on *E. coli* O157:H7 outbreak of 2006, 1-172
 - on foodborne illness, 1-110–111, 113
 - on foods associated with *Salmonella*, 1-180
 - on *Giardia intestinalis* infections, 1-126
 - on peanut or tree nut allergies, 1-238
 - on *Toxoplasma gondii* infections, 1-126
- U.S. Code of Federal Regulations, 1-179, 181
- U.S. Department of Agriculture. *See also* U.S. Food Safety and Inspection Service
- Agricultural Research Service, 1-180–181
 - on BSE testing, 1-160
 - canning guidelines of, 2-79–80
 - on essences for food, 2-324
 - food and agricultural scientific research by, 1-48
 - maximum concentrations of curing salts permitted by, 3-161
 - meat inspection stamp of, 3-39
 - meat-grading system of, 3-35–36, 39
 - on nitrates and nitrites in cured foods, 3-160
 - Pathogen Modeling Program of, 1-147
 - slaughterhouse inspector regulations, 3-35
- U.S. Food and Drug Administration (FDA)
- on BSE contamination, 1-160
 - consumer web site on cooking pork, 1-179
 - on cooking pork vs. beef, 1-170–171
 - on cooking times and temperatures, specific, 1-184–185
 - E. coli* O157:H7 outbreak of 2006 and, 1-172
 - food additives banned by, 1-252
 - Food Code of. *See* FDA Food Code
 - on foodborne giardiasis, 1-127
 - on freezing raw foods, time-and-temperature standards for, 1-186
 - on histamine poisoning, 1-139
 - on killing anisakids, 1-123
 - on killing trichina worms, 1-121
 - on Modernist ingredients, 1-254
 - on nisin as food additive, 1-144
 - on roasting whole-meats roasts, oven temperatures for, 1-186
 - on sous vide cooking and storage, time-and-temperature standards for, 1-186
 - time-and-temperature curves of, 1-187
 - on *Yersinia enterocolitica* transmission, 1-117
- U.S. Food Safety and Inspection Service (FSIS)
- on chicken cooking times, 1-181
 - on pork cooking times, 1-179
 - Salmonella* reduction standards of, 1-168
 - on thin roasts vs. thick steaks, 1-187
- U.S. National Institutes of Health, 1-215
- U.S. National Toxicology Program, 1-220
- U.S. Patent and Trademark Office, 1-71

V

- vacuoles, of plant foods
 cooking and, 3-273
 enzymes and, 3-283
 vacuum compression and, 2-213
- vacuum
 definition of, 2-212
 freezing liquid nitrogen in, 1-324
 liquid in, physics of, 2-215
 sealing jars in canning and, 2-77
- vacuum chambers. *See also* chamber sealers
 foam forming with, 4-255, 258, 260, 310–315
- vacuum coffee brewer, 4-369
- vacuum compression
 physics of, 2-213
 for plant food cooking, 3-286
 using chamber sealers, 2-214
- vacuum concentrators, 2-285, 379, 380
- vacuum condensers, essential oils and, 2-320
- vacuum desiccators
 drying plant foods with, 3-365
 features of, 2-433, 436–437
 foam forming with, 4-310
 for Modernist kitchen, 2-286
- vacuum distillation, 2-380. *See also* rotary evaporators
- vacuum dryers, 2-430, 433, 436–437
- vacuum evaporation
 for concentrating flavor, 2-380
 for reducing sauces, jus, or glazes, 2-346
 of wine, 4-330
- vacuum filtering, 2-286, 4-352–358
 description of, 2-352, 358, 4-353–354
 equipment for, 2-286, 356–357
 how to, 2-357
 of wine, 4-344
- vacuum frying, 2-128
- vacuum inflation, foam forming with, 4-252, 254, 310
- vacuum jars, 2-286
- vacuum ovens, 2-433, 4-310
- vacuum packing, 2-208–227. *See also* sous vide
 for Activa bonding, 3-252
 boiling not crushing during, 2-213
 chamber sealers for, 2-214–221
 compression in, physics of, 2-213
 containers for, 2-210–211
 dehydration and, 1-328
 edge sealers for, 2-222–224
 freeze-drying and, 2-447
 freezing food and, 2-256
 freezing in liquid nitrogen after, 2-258
 ice-brine freezing and, 1-310
 impulse sealers for, 2-225
 mechanism of action, 2-212
 of plant foods, cooking and, 3-286
 rigid containers for, 2-226–227
 of sausage mix before stuffing, 3-227, 230
 searing before, 2-268
 of truffles, 2-471
 uses of, 2-208–209
- vacuum pressure, 2-391, 447
- vacuum pumps, 2-356
 membrane-type
 filtration with, 2-354, 357
 for Modernist kitchen, 2-284
 vacuum reduction using, 2-380, 381
- vacuum reduction
 for concentrating flavor, 2-379, 4-11
 freezing clear cubes of ice with, 1-333
 low-cost, 2-380–383
 with rotary evaporators, 2-391
 technique for, 2-381
 thickening with, 4-11
- vacuum tumblers, 2-285, 3-158, 166–167, 175
- vacuum-assisted aeration, 2-214
- vacuum-assisted cooling
 evaporation and, 1-321
 phase changes in, 1-290
- vacuum-assisted drying, 1-321, 2-215. *See also* vacuum-drying
- Vacuum-Concentrated Apple and Cabbage Juice, 2-389
- vacuum-drying, 2-430, 433, 436–437. *See also* vacuum-assisted drying
- vacuum-sealed individual portions, 2-199, 201
- vacuum-sealing, compressing and impregnating produce by, 3-390–391
- vacuum-set foams, 4-310–315
 example recipes for, 4-311–313
- Valazza, Luisa Marelli, 1-28
- Valdre, Ugo, 1-44–45
- van Leeuwenhoek, Antony, 1-107, 128
- vanilla extract, parametric recipe for, 2-326
- vanilla infusion, parametric recipe for, 2-310
- Vanilla Olive Oil Powder, 4-35
- vapor, gas vs., 1-300
- vapor pressure, 1-314, 326
- vaporization, 1-314–325. *See also* evaporation
 heat of, 1-296. *See also* latent heat of vaporization
- La Varenne, École de, 4-322–325
- La Varenne, François Pierre de
 as chef to French ruling class, 1-8, 9
 French cuisine and, 1-19
 innovations of, 1-20
- variant Creutzfeldt-Jakob disease (vCJD), 1-159, 160, 161
- variety meats. *See* innards
- Varvary, 1-70
- vat pasteurization, 1-188
- veal. *See also* oxtail
 Braised Veal Foreshank, 5-60, 62
 Brown Veal Stock, 2-300
 cooking sous vide, parametric recipe for, 3-96, 109
 primal cuts of, 3-44
 Sous Vide and Pressure-Cooked Veal Breast with Bulbous Vegetables, 3-111
- veal heart, cooking sous vide, parametric recipe for, 3-146
- veal knuckle and neck bones, Brown Veal Stock, 2-300
- veal liver, cooking sous vide, parametric recipe for, 3-146
- veal marrowbones
 Bone Marrow Custard, 5-60, 63
 Turbot with Onion and Marrow Broth, 3-105
- veal stock, parametric recipe for, 2-296–298
- veal sweetbreads
 cooking sous vide, parametric recipe for, 3-146
 Crispy Sweetbreads, 3-150
 Sweetbreads with Sour Mango Powder and Shiitake, 3-151
- veal tongue
 brining, parametric recipe for, 3-172
 cooking sous vide, parametric recipe for, 3-146
 Sous Vide Veal Tongue, 5-49, 50
- vegetable chips
 example recipes for, 3-328–330
 fried, best bets for, 3-328
 parametric recipe for, 3-328–329
- vegetable gels, hot, parametric recipe for, 4-164–165
- vegetable glue, 3-392
- vegetable jus, parametric recipe for, 2-344–345
- vegetable sheeters, Japanese, 3-326
- vegetable slicers, rotary, Japanese, 3-327
- vegetable stock, parametric recipe for, 2-296–297
- vegetables. *See also specific vegetables*
 Allium, Maillard reaction and, 3-90
 blanching, 2-269
 boiling and fixing color of, 2-63, 66
 classification of, 3-262
 colorectal cancer risk and, 1-214–215
 compressed and impregnated, example recipes for, 3-395–401
 Compressed Dill Pickled Vegetables, 5-55, 58
 cooked, seasonal mélanges of, 3-294
 cooking sous vide
 with fat, best bets for, 3-292
 with fat, parametric recipe for, 3-292
 of heat-sensitive vegetables, best bets for, 3-292
 parametric recipe for, 3-288, 289–290, 292
 for puree, best bets for, 3-290
 until tender, best bets for, 3-289
 covered sautéing of, 2-58, 60–61
 cruciferous. *See also specific vegetables*
 blanching, 2-214
 cut size for stock, 2-290–291
 cutting tools for frying, 3-326–327
 dehydrating
 best bets for, 3-366
 example recipes for, 3-368–369, 371
 parametric recipe for, 3-366–367
 FDA standards and, 1-189
 freeze-drying
 best bets for, 3-372
 example recipes for, 3-373, 5-261
 parametric recipe for, 2-451, 3-372
 heat-sensitive, cooking sous vide
 best bets for, 3-292
 parametric recipe for, 3-292
 heat-shocking, 3-358
 microwaving, best bets for, 3-311
 multistep deep-frying of, 2-122
 plated-dish recipes for, 5-259–275, 281–283
 preserving, best bets for, 3-348
 purees of
 best bets for, 2-425
 example recipes for, 2-426–427, 5-5, 216
- vegetables (*continued*)
 mechanics of, 3-279
 parametric recipe for, 2-424–425
 Ramen Vegetables, 2-455, 5-247
 raw, seasonal mélanges of, 3-294
 smoked, example recipe for, 3-363
 Sous Vide Root Vegetables, 5-49, 53
 Sous Vide Vegetable Jus, 2-347
 Sous Vide Vegetable Stock, 2-303
 Vegetable Coals, 3-395
 volumetric equivalents for amounts of, 5-XLIV–XLV
 water content of, 5-XLI
 Wok-Fried Malaysian Vegetables, 5-169
- vegetarian dishes simulating meats, 3-388
- vegetarianism, 1-244
- Velveeta cheese, 4-222
- venison. *See also* deer
 cooking sous vide, parametric recipe for, 3-96
 in Cured Beef Tenderloin “Bresaola Style,” 3-185
 Venison Loin Rossini, 3-98
- ventilation hoods, HEPA (High Efficiency Particulate Air), 1-205
- venting, pressure cookers or pressure canners, 2-86–87
- verbena, Halibut in Verbena Bubble, 4-156–157
- Verdun, Pierre, 2-412
- verjus
 as acidifier, 2-314
 Constructed Red Wine Glaze, 5-219, 221
- Versawhip, 4-244
 for thick foams, parametric recipe for, 4-278–279
- very-low-density lipoprotein (VLDL), 1-226
- Veyrat, Marc
 Citrus Air recipe, 4-265
 Halibut in Verbena Bubble recipe, 4-156–157
 homemade sodas by, 4-239
 Modernist cuisine and, 1-64
 Mushroom and Bacon Cappuccino recipe, 4-275
 Nouvelle cuisine and individuality of, 1-27, 39–40
 Truffle Jus recipe, 4-53
- vibrator tray, for espresso tamping, 4-380
- Vibrio cholerae*, 1-132, 134, 135, 145
- vicinal water
 drying with warm air and, 2-432
 food drying and, 2-428
 freeze-drying and, 2-444, 447
 puffing skin and, 3-122, 123
- Victrola Coffee, 4-375, 396, 398, 401
- vin jaune du Jura
 Sauce Vin Jaune, 5-113, 116
 Smoked Potatoes with Vin Jaune Sabayon, 3-363
- vinaigrettes, 4-230–231
 Cherry Vinaigrette, 5-267, 270
 Invincible Vinaigrette, 4-231
 Mustard Vinaigrette, 4-231
 Passion Fruit-White Soy Sauce Vinaigrette, 5-181, 183
- Vinay, Jean-Paul, as elBulli chef, 1-33, 34
- Vindaloo Curry, 5-90. *See also* Goan Curry

- vinegar
- as acidifier, 2-314, 315
 - eggs marinated in, 4-75
 - Elder Flower Vinegar, 2-315
 - Maple Vinegar Gastrique, 5-125, 128
 - osmanthus, 5-172
 - Oysters with Mignonette Air, 4-265
 - production process for, 1-256
 - Quail with Apple-Vinegar Emulsion and Water Chestnuts, 3-101
 - Seaweed Vinegar, 2-315
 - Sherry Gel Cube, 5-267, 270
 - vinegar-coagulated egg and, parametric recipe for, 4-82
- virions, 1-154
- virtual cooking experiments. *See* computer simulation models
- viruses, 1-152–156
- alcohol sanitizers and, 1-200
 - as foodborne pathogens, 1-109, 111, 113
 - hepatitis, 1-155
 - names for, 1-112
 - noroviruses, 1-153–154
 - reproduction of, 1-152–153
 - rotaviruses, 1-155
 - spreading, mathematics of, 1-153
- viscometers, 4-6, 8, 10
- viscosity
- of common liquids, 4-8
 - controlling, options for, 4-16
 - emulsions and, 4-204–205
 - extreme, of solid that drips, 4-9
 - measuring, technology of, 4-8
 - shear forces in fluids and, 4-5–6
 - thickeners and, 4-10
 - selection of, 4-15
- vitamin A, 1-235
- vitamin C
- as acidifier, 2-314
 - aging braises and pot roasts and, 2-98
 - browning reaction in plants and, 3-283
 - health benefits of, 1-235
 - natural vs. synthetic, 1-254–255
 - nitrites in cured meats and, 1-143
 - to slow plant juice browning, 2-338
- vitamin E, 1-143, 235
- vitamin supplements, debate on, 1-235
- viticulture, 1-7, 4-329–331
- Vitis labrusca*, 4-327
- Vitis vinifera*, 4-327, 328–329
- Vives, Joachim, 4-184
- vodka
- Buddha's Hand Vodka, 2-389
 - coffee brewing in, 4-371
 - Fines Herbes Extract, 2-327
 - House Bitters, 2-327
 - Modernist Fried Chicken, 3-337
- volatiles
- evaporated, wineglass shapes and, 4-325
 - in roasted coffee, 4-361
 - vacuum-drying and removal of, 2-433
- volume
- equivalents for amounts of typical foods, 5-XLIV–XLV
 - surface area ratio to, 2-288
- Vongerichten, Jean-Georges
- eating experience and career of, 1-49
 - Green Asparagus and Morels with Asparagus Jus recipe, 2-341
 - homemade sodas by, 4-239
 - molten chocolate cake by, 1-15
 - New International cuisine and, 1-30, 52
 - restaurants of, 1-31
 - Spiced Chili Oil recipe, 2-330
 - Sweetbreads with Sour Mango Powder and Shiitake recipe, 3-151
 - Tuna Ribbons with Ginger Marmalade recipe, 3-202
 - vegetable juices, oil infusions, and vinaigrettes of, 1-35
- Vovito Caffè, 4-396, 401
- Vytorin, heart disease and, 1-227
- W**
- wafers
- dehydrating formula for, 3-367
 - Sweet Pea Wafer, 3-371
- Wagyu beef
- calpastatin in Brahman cattle vs., 3-76
 - marbling in, 3-19, 36
 - richness of, 5-57
 - shimofuri, fat content of, 3-84
- Wakuda, Tetsuya, Steelhead Trout Confit with Fennel Salad recipe, 3-106
- Walnut Clam Marmalade, 5-229, 230
- Warm Potato and Pistachio Pesto Salad, 4-53
- Warner, Ezra, 2-75
- Warner, K. F., 3-77
- Warner-Bratzler tenderometer, science of estimating tenderness with, 3-77
- water, 1-292–335. *See also* evaporation; humidity; moisture; water activity
- in body, kidneys and volume of, 3-141
 - boiling point of
 - relative humidity and, 2-163
 - vacuum pressure vs., 2-391
 - bottled, as pure water, 1-335
 - bound, dehydration and, 1-321
 - for brining, 3-158
 - carbonated, carbon dioxide and, 4-254
 - physics of, 1-334
 - changing states of, energy of, 1-300–303
 - chemistry of, 1-298
 - color and texture of cooking plant foods and, 3-274–275
 - in common foods, 1-294–295
 - condensation of, 1-314–325
 - deionized, 1-335
 - espresso-making and, 4-384
 - hydrating ion-coagulated gels and, 4-124, 125
 - for plant food cooking, 3-278
 - deposition of, 1-329
 - energy and heating of, 1-300
 - in ethanol, solubility of, 1-332
 - food content of, 1-294–295
 - free
 - as measure of dryness, 2-428
 - rehydration and, 1-321
 - freezing. *See* freezing
 - hard
 - dissolved minerals and, 1-335
 - espresso-making and, 4-384
 - hydration of ion-coagulated gels with, 4-124
 - plant food cooking and, 3-278
 - hydrogen bonds in alcohol vs., 1-314
 - Maillard reaction and, 3-90
 - phase changes in, 1-290
 - phase diagrams, how to read, 1-302–303
 - physics of, Myhrvold on writing about, 1-84
 - in plant foods, 3-273, 276, 278
 - properties and behavior of, 1-296
 - purification of, reverse osmosis and, 2-397
 - purity of, 1-335
- water (*continued*)
- quality of, 1-335
 - for espresso, 4-384
 - in raw foods, weight of, 3-79, 83
 - in rehydrated freeze-dried foods, 3-365
 - rotary evaporator mix of ethanol and, 2-384, 390
 - sausage binding and, 3-223
 - sausage grinding and, 3-230
 - in skin, 3-116
 - as solvent, 1-330–333
 - sublimation of, 1-326–329
 - supercool, how to, 1-312
 - thawing and, 1-311, 313
 - unsafe for drinking, 1-110, 129
 - vaporization of, 1-314–325
 - vicinal
 - drying with warm air and, 2-432
 - food drying and, 2-428
 - freeze-drying and, 2-444, 447
 - puffing skin and, 3-122, 123
 - viscosity of blood vs., 4-6
 - as viscosity reference, 4-6
 - water baths and. *See* water baths
 - wet-curing vs. dry-curing and, 3-160, 162
 - water activity
 - bacterial reproduction and, 1-144
 - equilibrium relative humidity and, 2-430
 - as free water measure, 2-428
 - physics of, 1-307
 - water and bleach solution
 - drying with warm air and, 2-433
 - for kitchen cleansing, 1-200, 204
 - water baths. *See also* holding temperature; ice-brine baths; ice-water baths
 - baking using, 2-106
 - boiling using, 2-63
 - boundary layer disruption in, 1-283
 - calibrating internal thermometer of, 2-230
 - chilling
 - equipment for, 2-285
 - technology of, 2-238
 - circulation control in, 2-234–235
 - efficiency of, 1-274
 - egg emulsions and, 4-226
 - frozen food cooking in, 2-262
 - heat transfer coefficient of, 1-283
 - holding at specific temperature in, 2-247–249
 - homemade and improvised, 2-240–241
 - hot, for blanching, 2-267
 - hotter than target temperature, 2-243–247
 - hydrating thickeners in, 4-26
 - for Modernist kitchen, 2-284
 - multiple
 - at different temperatures, 2-244, 247
 - how to cook in, 2-248–249
 - pasteurizing for storage using, 2-249–250
 - programmable heating/chilling and, 2-255
 - selection criteria for, 2-236–237
 - for sous vide cooking, 2-198–199, 232, 234
 - at target core temperature, 2-243–247

- water baths (*continued*)
 warm, thawing using, 2-263
- water chestnuts, Quail with Apple-Vinegar Emulsion and Water Chestnuts, 3-101
- Water Cube, at Beijing National Aquatics Center, 4-246
- water faucet handles, personal hygiene and, 1-200
- water softeners, ion-exchange filters as, 1-335
- water vapor. *See also* evaporation; humidity; latent heat of vaporization
 in air, 1-319–321, 325
 in deep-frying, 2-115, 116–117, 118–119, 125
 freeze-drying and, 2-444
 in shallow frying, 2-127–128
 vacuum reduction and, 2-380
- watercress
 cooking sous vide, parametric recipe for, 3-290
 Creamed Watercress, 2-426, 5-5
- Waterhouse, Andrew, 4-349
- water-in-gas (W/G) emulsions, 4-243
- water-in-oil (W/O) emulsion, 4-199, 203
- water-in-oil-in-water (W/O/W) emulsion, 4-199
- watermelon
 compressing, parametric recipe for, 3-390
 impregnating, parametric recipe for, 3-390
 smoking, parametric recipe for, 3-362
 Watermelon Bulgogi plated-dish recipe, 5-285–287
 Watermelon Meat, 3-394, 5-285
 Watermelon Rind Kimchi, 5-285, 286
- watermelon chips
 parametric recipe for, 3-328
 Watermelon Chips, 3-328
- Waters, Alice
 New American cuisine and, 1-28–29
 Razor Clam with Sauce Verte recipe, 3-112
 on Slow Food, 1-23
- water-vapor ovens
 baking using, 2-106
 cooking modes of, 2-155–156
 CVap. *See* CVap water-vapor ovens
 heat and humidity control in, 2-158–159
 invention of, 2-154
 for Modernist kitchen, 2-284
 pot-roasting using, 2-96
 for sous vide cooking, 2-232, 239, 243
 water content of heated air in, 2-153
- Watson, Hugh, 3-39
- Watt, James, 1-272
- wattles, preparation of, 3-122
- watts, 1-272–273, 2-10
- wavelength, of microwaves, 2-182
- waxy corn, thickening with, 4-20, 28
 parametric recipe for, 4-28
- wd~50. *See* Dufresne, Wylie
- WDT (Weiss Distribution Technique), for grooming espresso, 4-383
- Weaire, Denis, 4-246
- Weaire-Phelan structure, 4-246
- weasand meat, as sausage binder, 3-222–223
- weather, winemaking and, 4-328–329
- weeping. *See* syneresis
- weight loss diets, 1-240–241
- Weight Watchers, 1-241, 242
- weighting agents, emulsion stability and, 4-204
- weights
 calibrated, for pressure-canning, 2-86–87
 conversion tables, 5-XXXVII
 and measures, 1-94–95
 scales for measuring
 digital. *See* digital scales
 laboratory, 4-23
- Weil, Roman, 4-339, 340
- Weiss, John, 4-383
- Weiss Distribution Technique (WDT), for grooming espresso, 4-383
- Wendleboe, Tim, 4-396, 400
- Westinghouse, Tenderay process for dry-aging meat of, 3-41, 78
- wet cures, basic, parametric recipe for, 3-169
- wet process, for coffee, 4-358
- Wet Whisker, 4-398
- wet-aging meat, 3-41
- wet-bulb temperature
 as baking temperature, 2-103, 106, 107, 112
 barbecue stall and, 3-212
 basting and, 2-103
 for beer can chicken, 2-109
 braising in ovens and, 2-96
 in CVap water-vapor oven, 2-158–159, 165
 dry-bulb temperature vs., 2-96, 102, 106, 112
 drying and, 2-431
 drying stages in baking and, 2-106–108
 evaporative cooling and, 2-155
 pot-roasting in ovens and, 2-96
 on psychrometric charts, how to read, 1-323
 in Rational combi oven, 2-164–165
 relative humidity and, 1-322
 for smoking, 3-208, 211
- wet-curing
 best bets for, 3-169
 equilibrium method for, 3-162, 165
 how to, 3-170–171
 for food preservation, 3-152
 high-concentration method for, 3-171
 osmosis and, 3-154
 salinity for, 3-160
 speeding by injection or vacuum, how to, 3-174–175
- wet-grinding, 2-412–427
- with colloid mills, 2-413–414, 416–419
 equipment for, 2-412–414
 with Pacojet, 2-407
 with rotor-stator homogenizers, 2-413, 420–421
 with ultrahigh-pressure homogenizers, 2-422–423
 with ultrasonic homogenizers, 2-414–415
- W/G (water-in-gas) emulsions, 4-243
- wheat. *See also* flour
 allergies to, 1-238
 thickening with, parametric recipe for, 4-28
- Wheat Bran Fiber Study, 1-215, 217
- wheat pasta, parametric recipe for, 3-381
- wheat starch, 4-20, 28
- whey protein isolate
 foaming and, 5-187
 for froths, parametric recipe for, 4-264
- Whipped Butter, 4-286
- Whipped Cheese, 4-272
- Whipped Yogurt Crisps, 4-292
- whipping siphons
 for cold foams, 4-245
 cutaway illustration of, 4-261
 to foam batter on food for frying, 3-316
 foam forming with, 4-252, 255, 258
 for Modernist kitchen, 2-286
 molding sausage with, 3-241
 nitrous oxide used in, 4-256
- whisks
 emulsifying with, 4-206, 208
 foam forming with, 4-252, 255, 258, 259
 frothing milk for espresso with, 4-391
- White, Marco Pierre, 1-28
- white abalone, about, 5-203
- white asparagus, Sous Vide White Asparagus, 5-147, 149
- white cabbage, Sous Vide and Pressure-Cooked Veal Breast with Bulbous Vegetables, 3-111
- White Coleslaw, 5-67, 72
- White Grape Syrup, 4-52
- white hot, 1-287
- White Lily flour, 5-13, 77
- white meat
 in chickens and turkeys, 3-12
 in chickens vs. ducks, 3-16–17
 meat color and, 3-12–15
- White Stock, 2-297
- white tea infusion, parametric recipe for, 2-310
- white wine. *See specific types of wine*
- whitefish, cold-smoking, parametric recipe for, 3-210
- “Why Most Published Research Findings Are False” (Ionnadis), 1-220
- Wickens, Robin, 1-71
- wild boar
E. coli O157:H7 outbreak of 2006 and, 1-172
Trichinella and, 1-120, 122
- wild rice, puffed, parametric recipe for, 4-302
- wild wood violets, Blossom Salad, 5-171, 172
- Wiltshire tank cure, parametric recipe for, 3-169
- wind chill factor, convection and, 1-283
- wine, 4-316–353. *See also specific types of wine*
 alcohol percentage in, 1-330
 antimicrobial properties of oregano or thyme and, 1-145
 aroma kit and, technology of, 4-348
 cheap vs. expensive, 4-340, 342
 closures, 4-344–345
 color and flavor of, 4-334–335, 338
- wine (*continued*)
 corked, 4-348–350, 349
 decanting, 4-342–343
 descriptions of, 4-339–340
 freeze concentration of, 2-396
 gold medals for, 4-338–339
 grape varieties and, 4-326–328
 great, factors in, 4-322–332
 hyperdecanting, 4-343
 labels, 4-351
 for marinating, 3-195
 names, rules, and laws of, 4-331–332
 pairing, 4-350, 352, 5-109
 as preserved plant food, 3-346
 production process for, 1-256
 ratings of, 4-338–339
 red, resveratrol in, 1-228
 reverse osmosis in making, 2-397
 reviews of, goals for, 4-340
 seasoning with, 2-317
 storing, 4-345–348
 taste and flavor myths about, 4-341
 tasting, 4-334–353
 sensory science of, 4-337
 terroir and, 4-322–325
 underground cellars for, physics of, 4-345
 unfinished bottles of, 4-346–348
 vacuum packing and, 2-213
 viscosity of, 4-353
 viticulture and, 4-329–331
 weather and climate, and, 4-328–329
The Wine Advocate, 4-330, 338
 Wine Aroma Wheel, 4-339
Wine Business Monthly, 4-338
 wine cellars, underground, physics of, 4-345
 wine “improvement” devices, 4-343
Wine Spectator, 4-348
 wineglasses
 legs or tears on inside of, 4-353
 shape of, evaporated volatiles and, 4-325
 winemaking, 1-7, 4-329–331
 winter squash. *See also specific types of winter squash*
 cooking sous vide, parametric recipe for, 3-289, 290
 puree of, parametric recipe for, 2-425
 Root Vegetable Risotto, 3-309
- W/O (water-in-oil) emulsion, 4-199, 203
- Woese, Carl, 1-130
- wok burners, 2-52, 56–57, 287
- Wok-Fried Malaysian Vegetables, 5-167, 169
- woks. *See also* stir-frying
 bao technique with, 2-54, 55
 chao technique with, 2-56–57
 glowing hot, physics of, 1-287
 heat transfer in, 2-48
 sautéing using, 2-45
 seasoning, 2-53
- Wolfert, Paula, Duck Leg Confit with Pommes Sarladaises recipe, 3-178
- Wolke, Robert L., 1-44
- The Woman Who Thinks Like a Cow*, 3-36
- Women's Health Initiative study
 on dietary fat and cancer, 1-233
 on dietary fat and heart disease, 1-229
 on dietary fiber and colon cancer, 1-217, 219, 220
 on multivitamins, 1-235

Women's Healthy Eating and Living trial, 1-233

Wondra, thickening with, 4-22, 30
parametric recipe for, 4-30

wood

for smoking

choices in, and myths of, 2-145

cultural importance of, 2-136

soaked, for smoking, 2-145

wetting for smoking, cautions

against, 2-141, 143

wood stoves, 1-286

wood-fired ovens, 2-26–27, 33

World Health Organization, 1-228, 240

worms. *See* parasitic worms

worst-case scenarios, food safety rules and, 1-168–169

W/O/W (water-in-oil-in-water)

emulsion, 4-199

Wrangham, Richard, 1-6, 3-269

X

xanthan gum

for bubbles and froths, parametric recipe for, 4-264

for cold gels, parametric recipe for, 4-140

controlling syneresis with, 4-17

for edible films, parametric recipe for, 4-60

as emulsion stabilizer, 4-215

for fluid gels, parametric recipe for, 4-177

as foam stabilizer, 4-257

gluten-free bread and, 3-376

in heavy cream, 4-102

for hot fruit gels, parametric recipe for, 4-165

for hot gels, parametric recipe for, 4-160

hydration of, 4-38

interactions with other thickeners, 4-44–45

for light foams, parametric recipe for, 4-270

myriad uses of, 4-40

natural sources for, 1-253, 257

product guide for, 4-IV–V

properties and uses of, 4-42–43

for set foams, parametric recipe for, 4-288–289

for spherification, parametric recipe for, 4-187

for thick foams, parametric recipe for, 4-278–279

thickening with, parametric recipe for, 4-46, 47

xanthophyll, poultry flesh color and, 3-93

xiao long bao, 5-253

XO Sauce, 4-52

Y

Yakitori, 3-201

yeast

corked wine and, 4-350

on ripening cured meat or seafood, 3-173

yellow squash, cooking sous vide,

parametric recipe for, 3-289

yellow wax beans, Fresh Bean Salad, 5-85, 87

Yersinia enterocolitica, 1-117, 134, 145

yogurt

Activa used in, 3-251

Banana Yogurt, 5-98

Dannon

for American tastes, 1-20–21

as fast, ready-to-eat food, 1-22–23

fermentation and, 1-134

fruit-on-the-bottom, 1-20–21

for marinating, 3-190, 198

Whipped Yogurt Crisps, 4-292

Yogurt Foam and Sweet Potato

Chips, 4-287

Young, Chris, 1-85

yuba, 5-205

Abalone and Foie Gras Shabu-Shabu

with Yuba and Enoki, 5-197, 203

Green Pea Yuba, 4-115

yuzus

Uni with Whipped Tofu and

Tapioca, 4-285

Yuzu and Kumquat Marmalade, 3-356

Z

Zhu, Johnny, ramen cups developed by, 5-247

Zhu, Mrs., Microwaved Tilapia with

Scallions and Ginger recipe, 3-115

Zichichi, Antonino, Erice Conferences

and, 1-44, 45

zinc, health benefits of, 1-235

Zinfandel, history of sleuthing out, 4-326

Ziryab, 1-10

Zoecklein, Bruce W., 4-334

Zoka café, 4-398

zucchini

cooking sous vide, parametric recipe for, 3-289, 292

preserving, parametric recipe for, 3-348

Zucchini Blossom Beignet, 5-151, 153