



WAYNE GISSLEN

PROFESSIONAL EIGHTH EDITION  
COOKING

WILEY

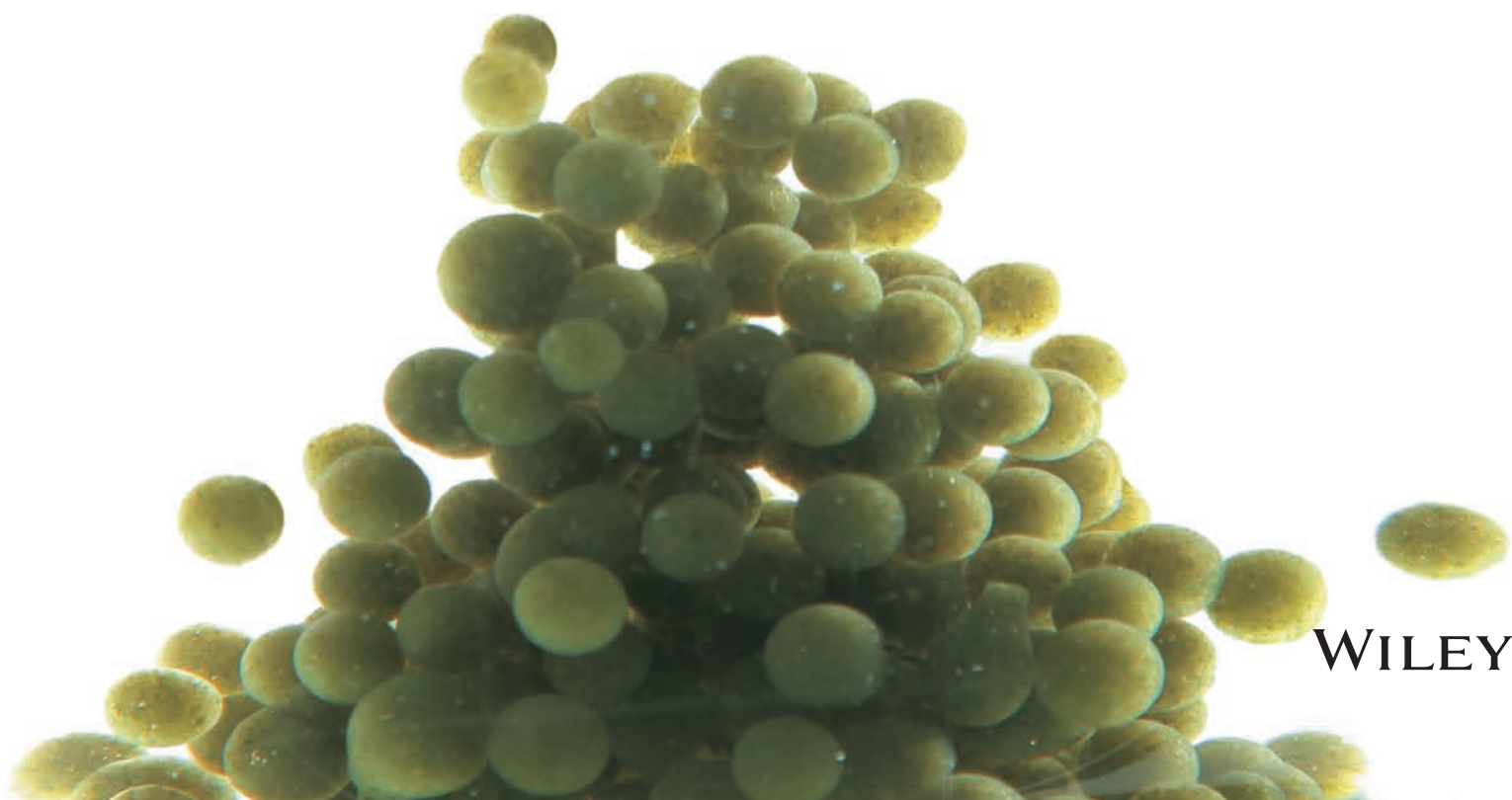
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Photography by J. Gerard Smith

WAYNE GISSLEN

PROFESSIONAL EIGHTH EDITION  
COOKING



*This book is dedicated to  
the many Chef-Instructors  
preparing a new generation of culinary professionals.*



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# PREFACE

The *Eighth Edition of Professional Cooking* reflects the changing nature of our understanding of cooking and related fields such as food safety, nutrition, and dietary practices, as well as new thinking about how best to teach this material. What has not changed is the core material that focuses on the essentials—the comprehensive understanding of ingredients and basic cooking techniques that are the foundation of success in the kitchen, and the development of manual skills to apply this knowledge.

## WHAT'S NEW

The *Eighth Edition of Professional Cooking* contains a great deal of new and revised material. Among the most important changes are:

- 125 new images detailing cooking procedures and modern plating styles.
- A new chapter, Chapter 14, *combines common cooking methods for meats, poultry, and fish* to sharpen the focus on basic techniques and procedures. It also provides background, guidelines, and standards of quality for finished dishes. Specific methods unique to these products are detailed in later chapters.
- Further reorganization repositions the chapters on vegetable cookery *ahead* of meats and fish—giving the text a smoother, more logical flow.
- Chapter 29 on food presentation and plating is rewritten and newly illustrated for designing modern platings, appropriate for all types of food-service operations.
- Yields are reduced in most large-quantity recipes to no more than 8–12 portions.
- Food science topics get expanded treatment, with more detail on caramelization, gelatinization, dextrinization, and emulsification.
- Sous vide methods are enhanced by a larger recipe collection.
- Techniques of modernist cuisine, or molecular gastronomy, are recognized as increasingly important with an expanded recipe library. Hydrocolloids are incorporated in Chapter 8 along with conventional thickeners for sauces.
- Nutritional information is updated with MyPlate guidelines and a new discussion of exchange groups in dietary planning.
- Developing vegetarian menus receives more attention and updates.

- Increasing use of combi ovens in today's restaurants is supported with new combi recipe variations.
- Basic cooking methods are supplemented with detailed guidelines for evaluating the quality of finished products.

## THE RECIPES

The recipes are planned and organized to reinforce the basic skills being taught. In each case, specific recipes follow theories, guidelines, and general procedures applicable to a defined category of foods and/or cooking methods. Recipe variations encourage students to apply these procedures to other ingredients, and to see the similarities and differences among preparations.

Attention to the basics is the hallmark of this text. Because the purpose is to teach fundamental cooking techniques, it is important to illustrate them—and allow the student to experience them—with fundamental, straightforward recipes that reveal the connection between general theory and specific application. Many new recipes provide updates and alternatives that will achieve these goals.

Core recipes, usually those that directly follow a procedure, are chosen as clear and direct applications of a fundamental technique. These recipes help students learn the technique by applying it in the most straightforward way, without the distraction of unusual techniques or unfamiliar ingredients. Of the more than 1,400 recipes in the book (and additional recipes on *CulinaryE-Companion*), about 70 are designated as core recipes and are indicated by this icon.



core recipes

The book builds on these primary techniques to more advanced styles of preparation. More challenging recipes, including many new to this edition, enable students to refine their techniques and prepare dishes of increasing sophistication.

International and regional cuisines play important roles in the evolution of cooking in North America, and the text reflects that importance with approximately 130 international recipes. These recipes are indicated by a globe. Sidebars throughout give background information on these recipes and the cuisines and cultures they come from.



international recipes

Even more than with previous editions, important information devoted to vegetarianism and cooking for the various types of vegetarian diets is included. Approximately 475 recipes suitable for a vegetarian diet are indicated by the symbol shown here.



vegetarian recipes

What makes a dish feel modern is as much a matter of presentation as of ingredients or recipe instructions. How an item, along with garnish and sauce, is plated can make it look rustic or elegant, traditional or modern. Photographs accompanying the recipes illustrate a variety of preparations and plating styles.

Readers are urged to study Chapter 4, “Menus, Recipes, and Cost Management,” before proceeding with the recipes. This will ensure they know how to use the recipes in this book as well as understand the structure and limitations of the many recipes they will use in their careers.

While every culinary program has different requirements, the recipes in this book are adaptable to any purpose. New to this *Eighth Edition* is that most major recipes are now written for 12 or fewer portions, quantities that can be converted easily to higher or lower yields, either by hand or with the accompanying **CulinarE-Companion™** Recipe Management Software. Those recipes requiring more costly ingredients, made to order, or that are particularly complex have smaller yields. In addition, variations often indicate ingredient substitutions so the recipes will fit different budgetary requirements and local or regional tastes.

## NUTRITIONAL INFORMATION

Cooks and chefs are increasingly aware of the importance of preparing healthful foods. To support this, nutritional analyses are included for each main recipe. These analyses were done using the software program Genesis R&D 8.4.0, which calculates nutrients based on ingredients. It is important to realize that the actual nutrients in a prepared dish will vary depending on many factors. The following should be taken into account when reading the nutritional analyses:

- Where a portion size is indicated, the analysis is per portion.
- Where there is no portion size, as for stock and sauce recipes and most recipes in the baking chapters, the analysis is usually per ounce (28.35 g) or per fluid ounce (29.57 mL); for most hors d’oeuvre recipes, analysis is per piece.
- Not included in the analyses are ingredients listed: “to taste” or “as needed”; ingredients in sachets and bouquets-garnis; optional ingredients; garnishes such as parsley sprigs.
- Stocks are adjusted for removal of bones, mirepoix, and other strained out ingredients.
- Mirepoix ingredients are not included, except for a small amount of sodium.
- If a quantity range is given for an ingredient, the smaller number was used.
- Adjustments are made for recipes in which food is degreased or fat is skimmed off. The amount of fat remaining will vary depending on how thoroughly the item is degreased.
- Fat was calculated for pan-fried and deep-fried foods based on a percentage of the total weight. The amount of fat actually absorbed will vary depending on the temperature of the fat, the cooking time, and the surface area of the food.

- For marinated foods, 10 percent of the marinade is included in the analysis, unless the marinade is used to make a sauce, in which case all the marinade is included.
- The amount of fat used for sautéing was estimated for the analysis.
- The numbers for each nutrient are rounded according to FDA rounding rules for food labeling.
- The “(% cal.)” information following the fat content in each analysis refers to percentage of calories from fat, and is required to determine whether a recipe can be labeled as low in fat. It can’t be used to determine percentage of fat in the total diet.

For more awareness of the fat content of prepared foods, dishes especially low in fat are designated by the heart symbol. *Low in fat* means, according to FDA labeling laws, that the food contains 3 grams of fat or less per reference amount (or serving size indicated in the analysis) if the reference amount is greater than 30 grams (about 1 ounce). This is to prevent making foods sound low in fat just by making the portion size smaller. Main-dish items and meals (weighing at least 6 ounces per serving and containing two or more from the four food groups—bread, cereal, rice and pasta; fruits and vegetables; milk, yogurt and cheese; or meat, poultry, fish, dry beans, eggs, and nuts) must contain 3 grams of fat or less per 100 grams and not more than 30 percent of calories from fat.



low in fat  
recipes

## GOALS AND ORGANIZATION OF THIS BOOK

This book has a dual goal: *understanding*—that is, of cooking theory, of how to cook—and *performing*—that is, mastery of a set of manual skills and the ability to apply them to a wide range of cooking styles and products.

This *Eighth Edition* retains the book’s basic approach, but sharpens the focus on the fundamentals with its new organization. The basic cooking methods (dry-heat methods, moist-heat methods, and so on) are introduced early. Then, within the main cooking chapters, the material is arranged by cooking method. In addition, the new Chapter 14, “Cooking Methods for Meat, Poultry, and Fish”, focuses directly on the common cooking methods for these products, allowing the student to master fundamental techniques, before exploring variations on these procedures unique to individual products in later chapters.

*Professional Cooking* focuses on the development of flexible skills, which are essential for a successful cooking career. The graduate who understands the workings of foods and the interplay of ingredients, cooking methods, cost factors, and other elements can function successfully in any type of food-service operation.

## THE ROLE OF THE CHEF-INSTRUCTOR

No book can substitute for practical kitchen experience. Nor can a book replace an experienced chef-instructor. Although this book presents methods and recipes that are widely used and accepted,

many instructors will prefer procedures that differ and may wish to supplement the recipes with their own.

## FEATURES

### Pronunciation Guides and Glossaries

Phonetic guides are included for difficult words, giving the approximate pronunciation using English sounds. Definitions of terms introduced in the text are summarized in the Glossary.

### Illustrations

Hundreds of full-color photographs, including 125 new to this edition, illustrate basic manual techniques *shown from the point of view of the person performing them*. Additional photographs illustrate ingredients and finished dishes. Numerous line drawings also enhance the text, illustrating hundreds of pieces of equipment you'll encounter in the professional kitchen.

### Format

The very readable format emphasizes and highlights key points in bold type, italics, and numbered sequences, so key information can be located and reviewed at a glance.

### Realistic Procedures

Though supported by cooking theory, procedures here are based on actual industry practice. Attention is given to quantity production, but also the special problem of cooking to order. Presentation and service of finished product are considered in detail, as is pre-preparation, or *mise en place*—so essential to the organization of a working restaurant. At the same time, the major emphasis is on quality, too often neglected in the quest for convenience. Finally, although much of what we talk about is strongly influenced by the cooking of other nations, the practices discussed are primarily those of North American food service.

## DIGITAL RESOURCES AND SUPPLEMENTS

### CulinarE-Companion™ Recipe Management Software

**CulinarE-Companion™** is a web-based database of recipes from *Professional Cooking*. You can set up an account and have instant access to the software, *viewable from any device's browser, whether a laptop, desktop, tablet, or mobile device*.

In addition to the recipes from the book and additional bonus recipes, the software includes a range of useful features. The registration code included with each copy of *Professional Cooking, Eighth Edition*, allows you to access this valuable asset at no additional cost—and your account does not expire so it can be used throughout your professional career.

### Feature Highlights

- **Enhanced Recipe Management Tools:** Edit, scale, view nutritional information, convert from U.S. to metric measures and vice versa; print and share recipes. Users can also add their own recipes and create and revise shopping lists.
- **Search recipes** by main ingredient, primary cooking method, and cuisine type.
- **Calculate nutritional analyses** and update if an ingredient is changed.
- **My Files:** Organize your recipes, your images, and your videos in one location.
- **Audio Pronunciations:** Within the extensive glossary, **CulinarE-Companion™** has over 1,000 terms with audio pronunciations to make learning a snap.
- **Food Costing:** Calculate food costs based on each ingredient's individual cost.
- **Unit Conversions:** Scale recipes and units of measures are converted to the next logical unit.
- **Adding New Ingredients:** Add new ingredients that do not exist in **CulinarE-Companion™** and they are automatically added into the ingredient database.
- **Nutritional Analysis:** Add ingredients to a recipe that do not have nutritional information and select from an existing list of ingredients with possible USDA matches so nutritional analysis is complete.

## WILEYPLUS

**WileyPLUS** is an online teaching and learning environment used by educational programs. It integrates the entire digital textbook with the most effective instructor and student resources, fitting every learning style. For instructors, help your students become kitchen ready...or flip your classroom for more engaged learning.

With **WileyPLUS**:

- Students achieve concept mastery in a rich, structured environment available 24/7.
- Instructors manage their course more effectively with assessment, assignments, grade tracking, and more.

### For Students

Different learning styles, different levels of proficiency, different levels of preparation—each student is unique. **WileyPLUS** empowers them to take advantage of individual strengths with:

- Timely access to resources that address demonstrated needs, with immediate feedback and remediation.
- Integrated multimedia resources—including Math Tutor, audio pronunciations, technique videos, visual learning activities, flashcards with audio pronunciations and quizzes, and much more—for multiple study paths to fit each student's learning preferences and encourage more active learning.
- Instant feedback and context-sensitive help. Students take control of their learning and practice until they master the material.

### For Instructors

**WileyPLUS** supports you with tools and resources for even more effective teaching. You can:

- Customize presentations with a wealth of resources and functionality. You can even add your own materials to your **WileyPLUS** course.

- Identify students who are falling behind and intervene accordingly, without waiting for them to come to office hours.
- Take advantage of the program's simplification and automation of such tasks as making assignments, scoring student work, managing your gradebook, and more.

## TECHNIQUE VIDEOS

Nearly 200 technique videos that clearly demonstrate essential kitchen skills are available as part of your **WileyPLUS** course. They can be used for study prior to class or review afterward, or as a step-by-step demonstration before lab.

## MATH TUTOR

Integrated within **WileyPLUS**, **Math Tutor** white-board type tutorials demonstrate common math used in the kitchen by walking through examples and calculating results. In addition, practice exercises are included for students to apply and reinforce these skills. Math Tutor is available in U.S. and metric versions.

## ADDITIONAL STUDENT AND INSTRUCTOR RESOURCES

The following student and instructor supplements are also available:

*Student Study Guide* (978-1-118-63675-6) contains review materials, practice problems, and exercises. (Answers are found in the *Instructor's Manual*.)

Online *Instructor's Manual with Study Guide Solutions* includes teaching suggestions and test bank questions and is available to qualified adopters from this book's web site at [www.wiley.com/college/gisslen](http://www.wiley.com/college/gisslen). Instructors who adopt *Professional Cooking* can download the Respondus test bank free of charge.

PowerPoint slides and an image gallery are also available to provide additional support in delivering course material.

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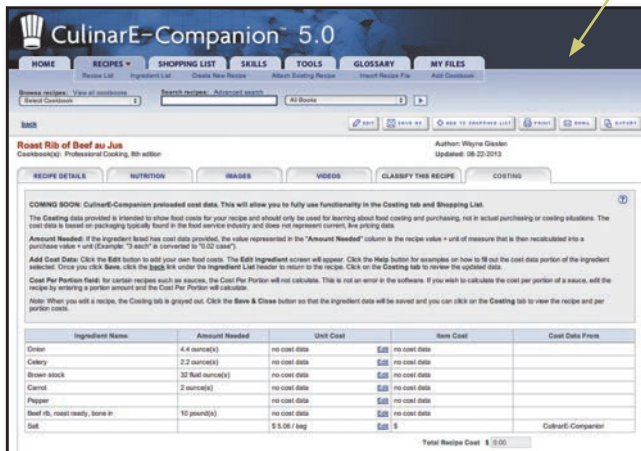


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# 1

## THE FOOD-SERVICE INDUSTRY

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This is an exciting time to begin a career in food service. Interest in dining and curiosity about new foods are greater than ever. More new restaurants open every year. Many restaurants are busy every night, and restaurant chains number among the nation's largest corporations. The chef, once considered a domestic servant, is now respected as an artist and skilled craftsperson.

The growth of the food-service industry creates a demand for thousands of skilled people every year. Many people are attracted by a career that is challenging and exciting and, above all, provides the chance to find real satisfaction in doing a job well.

Unfortunately, many people see only the glamorous side of food service and fail to understand that this is a tiny part of the picture. The public does not often see the years of training, the long hours, and the tremendous pressures that lie behind every success.

Before you start your practical studies, covered in later chapters, it is good to know a little about the profession you are entering. This chapter gives you a brief overview of modern food service, including how it got to where it is today and where it is headed.

---

### AFTER READING THIS CHAPTER, YOU SHOULD BE ABLE TO

1. Name and describe four major developments that significantly changed the food-service industry in the twentieth century.
2. Identify seven major stations in a classical kitchen.
3. Explain how the size and type of an operation influence the organization of the modern kitchen.
4. Identify and describe three skill levels of food production personnel.
5. Identify eight behavioral characteristics food-service workers should develop and maintain to achieve the highest standards of professionalism.



## A HISTORY OF MODERN FOOD SERVICE

The value of history is that it helps us understand the present and the future. In food service, knowledge of our professional heritage helps us see why we do things as we do, how our cooking techniques have been developed and refined, and how we can continue to develop and innovate in the years ahead.

An important lesson of history is that the way we cook now is the result of the work done by countless chefs over hundreds of years. Cooking is as much science as it is art. Cooking techniques are not based on arbitrary rules some chefs made up long ago. Rather, they are based on an understanding of how different foods react when heated in various ways, when combined in various proportions, and so on. The chefs who have come before us have already done much of this work so we don't have to.

This doesn't mean there is no room for innovation and experimentation or that we should never challenge old ideas. But it does mean a lot of knowledge has been collected over the years, and we would be smart to take advantage of what has already been learned. Furthermore, how can we challenge old ideas unless we know what those old ideas are? Knowledge is the best starting point for innovation.

### THE ORIGINS OF CLASSICAL AND MODERN CUISINE

Quantity cookery has existed for thousands of years, as long as there have been large groups of people to feed, such as armies. But modern food service is said to have begun shortly after the middle of the eighteenth century. At this time, food production in France was controlled by guilds. Caterers, pastry makers, roasters, and pork butchers held licenses to prepare specific items. An innkeeper, in order to serve a meal to guests, had to buy the various menu items from those operations licensed to provide them. Guests had little or no choice and simply ate what was available for that meal.

In 1765, a Parisian named Boulanger began advertising on his shop sign that he served soups, which he called *restaurants* or *restoratifs*. (Literally, the word means “fortifying.”) According to one version of the story, one of the dishes he served was sheep's feet in a cream sauce. The guild of stew makers challenged him in court, but Boulanger won by claiming he didn't stew the feet in the sauce but served them with the sauce. In challenging the rules of the guilds, Boulanger unwittingly changed the course of food-service history.

The new developments in food service received a great stimulus as a result of the French Revolution, beginning in 1789. Before this time, the great chefs were employed in the houses of the French nobility. With the revolution and the end of the monarchy, many chefs, suddenly out of work, opened restaurants in and around Paris to support themselves. Furthermore, the revolutionary government abolished the guilds. Restaurants and inns could serve diners reflecting the talent and creativity of their own chefs rather than being forced to rely on licensed caterers to supply their food. At the start of the French Revolution, there were about 50 restaurants in Paris. Ten years later, there were about 500.

Another important invention that changed the organization of kitchens in the eighteenth century was the stove, or *potager*, which gave cooks a more practical and controllable heat source than an open fire. Soon commercial kitchens became divided into three departments: the rotisserie, under the control of the meat chef, or *rôtisseur*; the oven, under the control of the pastry chef, or *pâtissier*; and the stove, run by the cook, or *cuisinier*. The meat chef and pastry chef reported to the *cuisinier*, who was also known as *chef de cuisine*, which means “head of the kitchen.”



Marie-Antoine Carême. *L'Art de la Cuisine Française au Dix-Neuvième Siècle*. Paris: L'auteur, 1833–1844. Courtesy of the Rare Manuscript Collections, Cornell University Library.

### CARÊME

All the changes that took place in the world of cooking during the 1700s led to, for the first time, a difference between home cooking and professional cooking. One way we can try to understand this difference is to look at the work of the greatest chef of the period following the French Revolution, **Marie-Antoine Carême** (1784–1833). As a young man, Carême learned all the branches of cooking quickly, and he dedicated his career to refining and

organizing culinary techniques. His many books contain the first systematic account of cooking principles, recipes, and menu making.

At a time when the interesting advances in cooking were happening in restaurants, Carême worked as a chef to wealthy patrons, kings, and heads of state. He was perhaps the first real celebrity chef, and he became famous as the creator of elaborate, elegant display pieces and pastries, the ancestors of our modern wedding cakes, sugar sculptures, and ice and tallow carvings. But it was Carême’s practical and theoretical work as an author and an inventor of recipes that was responsible, to a large extent, for bringing cooking out of the Middle Ages and into the modern period.

Carême emphasized procedure and order. His goal was to create more lightness and simplicity. The complex cuisine of the aristocracy—called *Grande Cuisine*—was still not much different from that of the Middle Ages and was anything but simple and light. Carême’s efforts were a great step toward modern simplicity. The methods explained in his books were complex, but his aim was pure results. He added seasonings and other ingredients not so much to add new flavors but to highlight the flavors of the main ingredients. His sauces were designed to enhance, not cover up, the food being sauced. Carême was a thoughtful chef, and, whenever he changed a classic recipe, he was careful to explain his reasons for doing so.

Beginning with Carême, a style of cooking developed that can truly be called international, because the same principles are still used by professional cooks around the world. Older styles of cooking, as well as much of today’s home cooking, are based on tradition. In other words, a cook makes a dish a certain way because that is how it always has been done. In Carême’s *Grande Cuisine*, and in professional cooking ever since, a cook makes a dish a certain way because the principles and methods of cooking show it is the best way to get the desired results. For example, for hundreds of years, cooks boiled meats before roasting them on a rotisserie in front of the fire. But when chefs began thinking and experimenting rather than just accepting the tradition of boiling meat before roasting, they realized either braising the meat or roasting it from the raw state were better options.

## ESCOFFIER

**Georges-Auguste Escoffier** (1847–1935), the greatest chef of his time, is still revered by chefs and gourmets as the father of twentieth-century cookery. His two main contributions were (1) the simplification of classical cuisine and the classical menu, and (2) the reorganization of the kitchen.

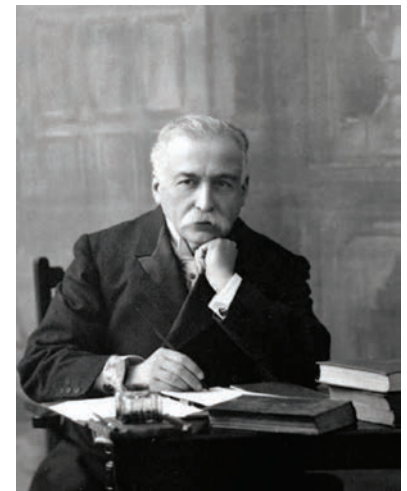
Escoffier rejected what he called the “general confusion” of the old menus, in which sheer quantity seemed to be the most important factor. Instead, he called for order and diversity and emphasized the careful selection of one or two dishes per course, dishes that followed one another harmoniously and delighted the taste with their delicacy and simplicity.

Escoffier’s books and recipes are still important reference works for professional chefs. The basic cooking methods and preparations we study today are based on Escoffier’s work. His book *Le Guide Culinaire*, which is still widely used, arranges recipes in a simple system based on main ingredient and cooking method, greatly simplifying the more complex system handed down from Carême. Learning classical cooking, according to Escoffier, begins with learning a relatively few basic procedures and understanding basic ingredients.

Escoffier’s second major achievement, the reorganization of the kitchen, resulted in a streamlined workplace better suited to turning out the simplified dishes and menus he instituted. The system of organization he established is still in use, especially in large hotels and full-service restaurants, as we discuss later in this chapter.

## MODERN TECHNOLOGY

Today’s kitchens look much different from those of Escoffier’s day, even though our basic cooking principles are the same. Also, the dishes we eat have gradually changed due to the innovations and creativity of modern chefs. The process of simplification and refinement, to which Carême and Escoffier made monumental contributions, is ongoing, adapting classical cooking to modern conditions and tastes.



Georges-Auguste Escoffier. Courtesy of Adjointe à la Conservation du Musée Escoffier de l’Art Culinaire.

## TWO IMPORTANT COOKBOOKS

In the Middle Ages, cooking consisted mostly of roasting meats on spits in front of a fire and suspending pots from hooks over the fire. Ovens, which were used in ancient Rome, had disappeared, so there was no baking. Roasted meats and poultry were usually boiled before being placed on the spit, and most foods were heavily spiced. It wasn't until the thirteenth century that ovens were used again and that stews and sauces started to appear on the dining table.

Perhaps the first important cookbook to appear at the end of the Middle Ages was *Le Viandier* ("The Cook"), by Guillaume Tirel, usually known as Taillevent, born about 1310.

Taillevent invented many dishes, especially sauces and soups. He refined old recipes to depend less on heavy use of spices and more on the flavors of the foods themselves. He wrote his book before the invention of the printing press, and handwritten copies of it remained in use for more than a century, until 1490, when it became perhaps the first cookbook ever printed.

By the seventeenth century, cooking practices still had not advanced much beyond Taillevent's day. Perhaps the next most important cookbook after Taillevent's was *Le Cuisinier François* ("The French Chef"), by François-Pierre de La Varenne (1615–1678). This book, published in 1651, was a summary of the cooking practices in households of the aristocracy. It was one of the first books to present recipes and cooking techniques in an orderly fashion rather than as an unsystematic collection. *Le Cuisinier François* was one of the main reference works for cooks for more than 150 years.

These two chefs are memorialized in the names of two important culinary institutions. Taillevent is the name of a Paris restaurant that has long been one of the finest in France, and La Varenne is the name of a distinguished cooking school.

Before we discuss the changes in cooking styles that took place in the twentieth century, let's look at some of the developments in technology that affected cooking.

### Development of New Equipment

We take for granted such basic equipment as gas and electric ranges and ovens and electric refrigerators. But even these essential tools did not exist until fairly recently. The easily controlled heat of modern cooking equipment, as well as motorized food cutters, mixers, and other processing equipment, has greatly simplified food production.

Research and technology continue to produce sophisticated tools for the kitchen. Some of these products, such as tilting skillets and steam-jacketed kettles, can do many jobs and are popular in many kitchens. Others can perform specialized tasks rapidly and efficiently, but their usefulness depends on volume because they are designed to do only a few jobs.

Modern equipment has enabled many food-service operations to change their production methods. With sophisticated cooling, freezing, and heating equipment, it is possible to prepare some foods further in advance and in larger quantities. Some large multiunit operations prepare food for all their units in a central commissary. The food is prepared in quantity, packaged, chilled or frozen, and then heated or cooked to order in the individual units.

### Development and Availability of New Food Products

Modern refrigeration and rapid transportation caused revolutionary changes in eating habits. For the first time, fresh foods of all kinds—meats, fish, vegetables, and fruits—became available throughout the year. Exotic delicacies can now be shipped from anywhere in the world and arrive fresh and in peak condition.

The development of preservation techniques—not just refrigeration but also freezing, canning, freeze-drying, vacuum-packing, and irradiation—increased the availability of most foods and made affordable some that were once rare and expensive.

Techniques of food preservation have had another effect. It is now possible to do some or most of the preparation and processing of foods before shipping rather than in the food-service operation itself. Thus, convenience foods have come into being. Convenience foods continue to account for an increasing share of the total food market.

Some developments in food science and agriculture are controversial. Irradiation, mentioned above, caused much controversy when it was introduced because it exposes foods to radioactivity to rid them of organisms that cause spoilage and disease. Scientists say, however, that no traces of radioactivity remain in the foods, and the procedure is now used more widely.

A more controversial technique is genetic engineering, which involves artificially changing the gene structure of a food to give it some desirable trait, such as resistance to disease, drought, or insect damage.

### Food Safety and Nutritional Awareness

The development of the sciences of microbiology and nutrition had a great impact on food service. One hundred years ago, there was little understanding of the causes of food poisoning and food spoilage. Food-handling practices have come a long way since Escoffier's day.

Also, little knowledge of nutritional principles was available until fairly recently. Today, nutrition is an important part of a cook's training. Customers are also more knowledgeable and therefore more likely to demand healthful, well-balanced menus. Unfortunately, nutrition science is constantly shifting. Diets considered healthful one year become eating patterns to be avoided a few years later. Fad diets come and go, and chefs often struggle to keep their menus current. It is more important than ever for cooks to keep up to date with the latest nutritional understanding.

Complicating the work of food-service professionals is a growing awareness of food allergies and intolerances. Not only are chefs called upon to provide nutritious, low-fat, low-calorie meals, they must also adapt to the needs of customers who must eliminate certain foods from their diets, such as gluten, soy, dairy, or eggs.

## COOKING IN THE TWENTIETH AND TWENTY-FIRST CENTURIES

All these developments have helped change cooking styles, menus, and eating habits. The evolution of cuisine that has been going on for hundreds of years continues. Changes occur not only because of technological developments, such as those just described, but also because of our reactions to culinary traditions.

Two opposing forces can be seen at work throughout the history of cooking. One is the urge to simplify, to eliminate complexity and ornamentation, and instead to emphasize the plain, natural tastes of basic, fresh ingredients. The other is the urge to invent, to highlight the creativity of the chef, with an accent on fancier, more complicated presentations and procedures. Both these forces are valid and healthy; they continually refresh and renew the art of cooking.

A generation after Escoffier, the most influential chef in the middle of the twentieth century was Fernand Point (1897–1955). Working quietly and steadily in his restaurant, La Pyramide, in Vienne, France, Point simplified and lightened classical cuisine. He was a perfectionist who sometimes worked on a dish for years before he felt it was good enough to put on his menu. “I am not hard to please,” he said. “I’m satisfied with the very best.” Point insisted every meal should be “a little marvel.”

Point’s influence extended well beyond his own life. Many of his apprentices, including Paul Bocuse, Jean and Pierre Troisgros, and Alain Chapel, later became some of the greatest stars of modern cooking. They, along with other chefs in their generation, became best known in the 1960s and early 1970s for a style of cooking called **nouvelle cuisine**. Reacting to what they saw as a heavy, stodgy, overly complicated classical cuisine, these chefs took Point’s lighter approach even further. They rejected many traditional principles, such as the use of flour to thicken sauces, and instead urged simpler, more natural flavors and preparations, with lighter sauces and seasonings and shorter cooking times. In traditional classical cuisine, many dishes were plated in the dining room by waiters. Nouvelle cuisine, however, placed a great deal of emphasis on artful plating presentations done by the chef in the kitchen.

Very quickly, however, this “simpler” style became extravagant and complicated, famous for strange combinations of foods and fussy, ornate arrangements and designs. By the 1980s, nouvelle cuisine was the subject of jokes. Still, the best achievements of nouvelle cuisine have taken a permanent place in the classical tradition. Meanwhile, many of its excesses have been forgotten. It is probably fair to say that most of the best new ideas and the longest-lasting accomplishments are those of classically trained chefs with a solid grounding in the basics.

### New Emphasis on Ingredients

Advances in agriculture and food preservation have had disadvantages as well as advantages. Everyone is familiar with hard, tasteless fruits and vegetables developed to ship well and last long, without regard for eating quality. Many people, including chefs, began to question not only the flavor but also the health value and the environmental effects of genetically engineered foods, of produce raised with chemical pesticides and fertilizers, and of animals raised with antibiotics and other drugs and hormones.

A prominent organization dedicated to improving food quality is Slow Food, begun in Italy in 1986 in reaction to the spread of fast-food restaurants. Slow Food has since become a global movement, with chapters in cities around the world. It emphasizes fostering locally grown food, using organic and sustainable farming practices, preserving heirloom varieties of plants and animals, and educating consumers about the food they eat.

A landmark event in the history of modern North American cooking was the opening of Alice Waters’s restaurant, Chez Panisse, in Berkeley, California, in 1971. Waters’s philosophy is that good food depends on good ingredients, so she set about finding dependable sources of the best-quality

### SLOW FOOD TODAY

As with any movement, the growth of Slow Food has not been without controversy. For more than 20 years after its founding, Slow Food had little impact in North America, finding greater popularity in Europe. As recently as 2008, the organization had only 16,000 members in the United States out of more than 100,000 in all.

In its earlier years, the movement was sometimes criticized for elitism and snobbishness, for focusing primarily on pleasure, and for being against technology and globalization. Detractors said opposition to global food trade and rejection of industrial agricultural practices are unrealistic in today’s world.

In recent years, however, Slow Food has expanded its focus and has addressed issues of race, poverty, and hunger as well as its more traditional concerns—the disappearance of local food traditions and people’s dwindling interest in the food they eat, where it comes from, and how it tastes. A surge of interest in Slow Food has come at the same time as growing concerns about the environment and climate change. Members encourage sustainable, ecologically sound agriculture and stewardship of the land as part of their efforts to educate people about their food and their eating habits.



vegetables, fruits, and meats, and preparing them in the simplest ways. Over the next decades, many chefs and restaurateurs followed her lead, seeking out the best seasonal, locally grown, organically raised food products. A few years after Chez Panisse opened, Larry Forgione picked up the banner of local ingredients and local cuisine in his New York City restaurant, An American Place. Other chefs quickly followed suit, and soon chefs across the continent made names for themselves and their restaurants at least in part by emphasizing good-quality local ingredients. Half a century ago, nearly all the most respected chefs working in the United States and Canada were European-born. Today, the movement begun by the pioneering, quality-oriented chefs of the 1970s and 1980s has fostered a great number of creative North American-born chefs who are among the most respected in the world.

Concern for quality of ingredients has led many chefs to support and to purchase from farmers who practice **sustainable agriculture**. This term refers to methods of raising healthful food in a way that is profitable to farms and farming communities and that provides living wages and benefits to workers while at the same time preserving and enhancing the soil, water, and air. Sustainable farming treats workers justly and raises animals in humane conditions. Farmers continually work to increase the fertility and conservation of soil and avoid the use of synthetic pesticides and herbicides as much as possible. The goal is to manage farmlands so that they not only will be profitable but will continue to be productive indefinitely.

Chefs can carry the concept of sustainability into their own operations by using renewable power sources, installing energy-efficient equipment, and recycling as many waste materials as possible.

The public has benefited greatly from these efforts. Today, in supermarkets as well as in restaurants, a much greater variety of high-quality foods is available than there was 40 or 50 years ago. Many chefs have modified their cooking styles to highlight the natural flavors and textures of their ingredients, and their menus are often simpler now for this reason.

### International Influences

After the middle of the twentieth century, as travel became easier and as new waves of immigrants arrived in Europe and North America from around the world, awareness of and taste for regional dishes grew. Chefs became more knowledgeable not only about the traditional cuisines of other parts of Europe but about those of Asia, Latin America, and elsewhere. Many of the most creative chefs have been inspired by these cuisines and use some of their techniques and ingredients. For example, many North American and French chefs, looking for ways to make their cooking lighter and more elegant, have found ideas in the cuisine of

### CATERINA DE MEDICI

The Medicis were a powerful Italian family that ruled Florence from the fourteenth to the sixteenth century and provided, in addition to the rulers of Florence, three popes and two queens of France.

Until recently, the accepted and often-told story is that when Caterina de Medici went to France in 1533 to marry the future King Henry II, she brought with her a staff of cooks as part of her household. This introduction of Italian cooking practices into France supposedly changed and modernized the cooking not only of France but of all of Western Europe. According to this story, Caterina and her Italian cooks should be credited with fostering modern cuisine.

When cookbooks and other culinary writings of the period are examined, however, it appears that French cooking didn't begin to modernize until at least a century later. During the hundred years after Caterina's arrival in France, no new, important cookbooks were written. There is no sign of a revolution in cooking. In fact, banquet menus that survive from the period are not much different from menus of the Middle Ages.

Banquets during the Middle Ages were like huge, sit-down buffets. For each course, the table was loaded with large quantities of meats, poultry, and fish dishes, usually heavily spiced, and an assortment of side dishes and sweets. Diners generally ate only what they could reach. The course was then removed and another course, also meats and side dishes, was loaded onto the table. Again, each person ate only a fraction of the dishes present, depending on what was within reach.

The modern idea of a menu in which everyone at the table eats the same dishes in the same order did not appear until the 1700s.

So on the one hand, it is not historically accurate to give the Italian princess Caterina credit for modernizing French cuisine. On the other hand, it is fair to say she and her offspring brought more refined manners and elegance to European dining rooms. Italian innovations included the use of the fork as well as greater cleanliness in general. An additional Italian contribution was the invention of sophisticated pastries and desserts.





Japan. In the southwestern United States, a number of chefs have transformed Mexican influences into an elegant and original cooking style. Throughout North America, traditional dishes and regional specialties combine the cooking traditions of immigrant settlers and the indigenous ingredients of a bountiful land. For many years, critics often argued that menus in most North American restaurants offered the same monotonous, mediocre food. In recent decades, however, American and Canadian cooks have rediscovered traditional North American dishes.

The use of ingredients and techniques from more than one regional, or international, cuisine in a single dish is known as **fusion cuisine**. Early attempts to prepare fusion cuisine often produced poor results because the dishes were not true to any one culture and were too mixed up. This was especially true in the 1980s, when the idea of fusion cuisine was new. Cooks often combined ingredients and techniques without a good feeling for how they would work together. The result was sometimes a jumbled mess. But chefs who have taken the time to study in depth the cuisines and cultures they borrow from have brought new excitement to cooking and to restaurant menus.

Today chefs make good use of all the ingredients and techniques available to them. It is almost second nature to give extra depth to the braising liquid for a beef pot roast by adding Mexican ancho chiles, for example, or to include Thai basil and lemongrass in a seafood salad. In the recipe sections of this book, classic dishes from many regions of the world are included among more familiar recipes from home. To help you understand these recipes and the cuisines they come from, background information accompanies many of them. The international recipes are identified in the Recipe Contents.

## New Technologies

As described on page 4, new technologies, from transportation to food processing, had a profound effect on cooking in the twentieth century. Such changes continue today, with scientific developments that are only beginning to have an effect on how cooks think about food and menus.

One of these technologies is the practice of cooking **sous vide** (soo veed, French for “under vacuum”). Sous vide began simply as a method for packaging and storing foods in vacuum-sealed plastic bags. Modern chefs, however, are exploring ways to use this technology to control cooking temperatures and times with extreme precision. As a result, familiar foods have emerged with new textures and flavors. (Sous vide cooking is discussed further in Chapter 6.)

Another approach to cooking precision was pioneered by the Spanish chef Ferran Adrià in his acclaimed restaurant, El Bulli. Adrià explores new possibilities in gels, foams, powders, infusions, extracts, and other unexpected ways of presenting flavors, textures, and aromas. This approach to cooking is called **molecular gastronomy**, a name coined by the French chemist Hervé This, who has done much of the research in the field. More recently, chefs and other food experts have looked for more approachable terms to describe these techniques. The term **modernist cuisine** has been popularized by Nathan Myhrvold in his massive set of books of the same name.

Molecular gastronomy, or modernist cuisine, has been taken up by Heston Blumenthal in England, Wylie Dufresne, Grant Achatz, and Homaro Cantu in North America, and other chefs who continue to experiment and to explore what science and technology can contribute to food and food presentation. Many of the techniques make use of unfamiliar ingredients, such as natural gums, and put familiar ingredients, such as gelatin and pectin, to unfamiliar uses. Although this approach to cooking may be best known for its unusual ingredients and techniques, its finest chefs are focused on the food, treating the techniques primarily as new tools in the chef’s repertoire.

Cooking and cooking styles continue to change. Men and women are needed who can adapt to these changes and respond to new challenges. Although automation and convenience foods will no doubt grow in importance, imaginative chefs who can create new dishes and develop new techniques and styles will always be needed, as will skilled cooks who can apply both old and new techniques to produce high-quality foods in all kinds of facilities, from restaurants and hotels to schools and hospitals.



## KEY POINTS TO REVIEW

- How have the following developments changed the food-service industry: development of new equipment; availability of new food products; greater understanding of food safety and nutrition?
- How have international cuisines influenced and changed cooking in North America?

# THE ORGANIZATION OF MODERN KITCHENS

## THE BASIS OF KITCHEN ORGANIZATION

The purpose of kitchen organization is to assign or allocate tasks so they can be done efficiently and properly and so all workers know what their responsibilities are.

The way a kitchen is organized depends on several factors.

**1. The menu.**

The kinds of dishes to be produced obviously determine the jobs that must be done. The menu is, in fact, the basis of the entire operation. Because of its importance, we devote a major section of Chapter 4 to a study of the menu.

**2. The type of establishment.**

The major types of food-service establishments are as follows:

- Hotels
- Institutional kitchens
  - Schools
  - Hospitals, nursing homes, and other health care institutions
  - Retirement community and assisted living facilities
  - Employee lunchrooms and executive dining rooms
  - Airline catering
  - Military food service
  - Correctional institutions
- Private clubs
- Catering and banquet services
- Fast-food restaurants
- Carry-out or take-out food facilities, including supermarkets
- Full-service restaurants
- Private homes (personal chefs)

**3. The size of the operation (the number of customers and the volume of food served).**

**4. The physical facilities, including the equipment in use.**

## THE CLASSICAL BRIGADE

As you learned earlier in this chapter, one of Escoffier's important achievements was the reorganization of the kitchen. This reorganization divided the kitchen into departments, or stations, based on the kinds of foods produced. A station chef was placed in charge of each department. In a small operation, the station chef might be the only worker in the department. But in a large kitchen, each station chef might have several assistants.

This system, with many variations, is still in use, especially in large hotels with traditional kinds of food service. The major positions are as follows:

- 1. The chef** is the person in charge of the kitchen. In large establishments, this person has the title of **executive chef**. The executive chef is a manager who is responsible for all aspects of food production, including menu planning, purchasing, costing, planning work schedules, hiring, and training.
- 2. If a food-service operation is large, with many departments (for example, a formal dining room, a casual dining room, and a catering department), or if it has several units in different locations, each kitchen may have a chef de cuisine.** The chef de cuisine reports to the executive chef.
- 3. The sous chef (soo shef)** is directly in charge of production and works as the assistant to the executive chef or chef de cuisine. (The word **sous** is French for "under.") Because the

executive chef's responsibilities may require a great deal of time in the office, the sous chef often takes command of the actual production and the minute-by-minute supervision of the staff.

4. The station chefs, or *chefs de partie*, are in charge of particular areas of production. The following are the most important station chefs.
  - The *sauce chef*, or **saucier** (so-see-ay), prepares sauces, stews, and hot hors d'oeuvres, and sautés foods to order. This is usually the highest position of all the stations.
  - The *fish cook*, or **poissonier** (pwah-so-nyay), prepares fish dishes. In some kitchens, this station is handled by the saucier.
  - The *vegetable cook*, or **entremetier** (awn-truh-met-yay), prepares vegetables, soups, starches, and eggs. Large kitchens may divide these duties among the vegetable cook, the fry cook, and the soup cook.
  - The *roast cook*, or **rôtisseur** (ro-tee-sur), prepares roasted and braised meats and their gravies and broils meats and other items to order. A large kitchen may have a separate *broiler cook*, or **grillardin** (gree-ar-dan), to handle the broiled items. The broiler cook may also prepare deep-fried meats and fish.
  - The *pantry chef*, or **garde manger** (gard mawn-zhay), is responsible for cold foods, including salads and dressings, pâtés, cold hors d'oeuvres, and buffet items.
  - The *pastry chef*, or **pâtissier** (pa-tees-syay), prepares pastries and desserts.
  - The *relief cook*, *swing cook*, or **tournant** (toor-nawn), replaces other station heads.
  - The *expediter*, or **aboyeur** (ah-bwa-yer), accepts orders from waiters and passes them on to the cooks on the line. The expediter also calls for orders to be finished and plated at the proper time and inspects each plate before passing it to the dining room staff. In many restaurants, this position is taken by the head chef or the sous chef.
5. *Cooks* and *assistants* in each station or department help with the duties assigned to them. For example, the assistant vegetable cook may wash, peel, and trim vegetables. With experience, assistants may be promoted to station cooks and then to station chefs.

## MODERN KITCHEN ORGANIZATION

As you can see, only a large establishment needs a staff like the classical brigade just described. In fact, some large hotels have even larger staffs, with other positions such as separate day and night sous chefs, assistant chef, banquet chef, butcher, baker, and so on.

Most modern operations, though, are smaller than this. The size of the classical brigade may be reduced simply by combining two or more positions where the workload allows it. For example, the *second cook* may combine the duties of the sauce cook, fish cook, soup cook, and vegetable cook.

A typical medium-size operation may employ a chef, a second cook, a broiler cook, a pantry cook, and a few cooks' helpers.

A **working chef** is in charge of operations not large enough to have an executive chef. In addition to being in charge of the kitchen, the working chef also handles one of the production stations. For example, he or she may handle the sauté station, plate foods during service, and help on other stations when needed.

Small kitchens may have only a chef, one or two cooks, and perhaps one or two assistants to handle simple jobs such as washing and peeling vegetables. Cooks who prepare or finish hot à la carte items during service in a restaurant may be known as **line cooks**. Line cooks are said to be on the hot line, or simply on the line.

In many small operations, the **short-order cook** is the backbone of the kitchen during service time. This cook may handle the broiler, deep fryer, griddle, sandwich production, and even some sautéed items. In other words, the short-order cook's responsibility is the preparation of foods that are quickly prepared to order.