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THE FOOD-SERVICE INDUSTRY

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. Describe the major events in the history of cooking and food service, from prehistoric times to the present.
2. Name the principal career positions in modern food service and bakery operations.

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 ***restoratives***. (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 dinners 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.

Georges-Auguste Escoffier.

Courtesy of Adjointe à la Conservation du Musée Escoffier de l'Art Culinaire.

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.

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.

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.

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 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

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.

GMOs

Genetically modified organisms, or GMOs, are plants or animals that have had their genes artificially altered to make them more productive in one or more ways, such as giving them increased resistance to disease or to herbicides. Those who support the use of GMOs argue that this is an important way to increase crop yields to feed an ever-growing population while using less land and that there is so far no good scientific evidence of their harmfulness. But opponents, including many chefs, feel that there are too many unknowns and possible long-term risks, whether to the health and sustainability of food crops or to the health of those who eat these plant and animal foods.

Many chefs in the farm-to-table movement are opposed to the use of GMOs. They feel that using primarily locally sourced ingredients helps them know more about the foods they buy and thus avoid purchasing GMOs.

BIODYNAMIC AGRICULTURE

Like organic agriculture, biodynamic agriculture emphasizes the importance of natural soil nutrients, such as compost and manure, and avoids the use of pesticides, herbicides, and other artificial chemicals. However, it goes beyond organic farming in its practice of treating soil, animals, and crops as a single system and its efforts to engage cosmic forces and spiritual concepts in planting and harvesting practices.

International standards exist for biodynamic farming, and a number of certification agencies will verify whether specific products meet these standards.

Although it originated in the 1920s, biodynamic agriculture is in limited use; it is practiced on only about 400,000 acres worldwide, nearly half of that total in Germany.

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 will not only be profitable but also 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.

When products are raised without the use of drugs and artificial chemicals, these products may be legally qualified to be labeled *organic* (or, in French, *biologique)*. See page 282 for a more detailed explanation of the "organic" label and what its requirements are. Going even beyond organic farming is a practice called *biodynamic agriculture* (see sidebar). This practice is not widespread, but some chefs see it as an important component of sustainability.

Sustainable agriculture often champions the use of *heirloom* varieties of fruits and vegetables, which are older varieties of plants that existed decades ago, before modern industrial agriculture began developing hybrid fruits and vegetables that were bred to be more productive and to better withstand mechanized harvesting and shipping long distances. Many people feel that modern hybridization has bred the flavor out of foods, and growing heirloom varieties results in products with better flavor and texture.

Closely related to the concept of sustainability is the **farm-to-table** movement, also referred to as *farm-to-fork*. Restaurants that promote farm-to-table support using locally produced foods, whether from nearby farms, fisheries, ranches, or other food producers. They also highlight locally made wines, beers, and other products on their menus. Names of local farmers and ranchers are often included on menus, so that customers are fully aware of the sources of their food.

Using locally produced foods is certainly not new. For many decades, chefs could be found early in the morning scouring local farmers markets to find the freshest produce, or visiting a local chicken producer to place an order in person. In recent years, the growth of the movement has been due, at least in part, to concerns about the freshness and safety of ingredients. Certainly local ingredients can arrive in the restaurant kitchen in a much fresher state than foods shipped long distances. In addition, the chef or restaurant owner can be more fully informed about local farming practices and methods, information that may not be available from large food producers at a distance. Concerns about agricultural practices, such as the use of GMOs (see sidebar), have spurred many chefs to learn more about how the foods they use have been grown. Knowing where food comes from, and passing this information to customers, is seen as important.

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 also 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 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 has been known as **fusion cuisine**, although in recent years this term has been used less often than other terms such as *global cuisine* and *globalization of flavors*. 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.

More recently, chefs have explored the use of *3D printing* to create foods with an even greater variety of shapes and flavors. As the sidebar explains, 3D printers create three-dimensional objects out of a variety of substances. Depending on the printer model, 3D printers in the kitchen may use food powders, pastes, or gels. At its simplest, a 3D printer could be used to create a decorative garnish item to accentuate a plate of food that is cooked by conventional methods. For example, strawberry blossoms, composed of freeze-dried strawberry powder, might garnish a fruit dessert. At the other extreme, an entire meal could be composed by a 3D printer.

Of course, the entire printing process is controlled by computers, so the technical aspects of the method may be a hindrance in the typical restaurant kitchen. In the future, however, computer programs for food printing may be widely shared via the Internet, making the process more approachable.

3D PRINTING

The basic inkjet computer printers we are all familiar with are 2D printers. They work by depositing a microscopically thin layer of ink on a sheet of paper in a predetermined pattern. 3D printers work by piling up layer upon layer of powder or other substance, until a three-dimensional object is formed. In a typical 3D process, also known as *additive manufacturing*, layers of powder are held together by layers of a liquid binder. The entire process of creating the desired shape is controlled by a computer program. Depending on the materials used, a wide range of objects can be created.

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 use of modern technology in the kitchen, from molecular gastronomy to 3D printing, is philosophically quite different from the farm-to-table movement discussed earlier. On the one hand, one group of chefs is working to transform food in surprising and often unrecognizable new ways, to change our experience of dining. On the other hand, another group of chefs relies on more traditional methods to present the freshest possible foods in the most direct ways, often using the simplest preparations to emphasize the freshness of the food. Both groups of chefs are contributing in important ways to our experiences of dining.

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.

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 communities 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.

One special type of short-order cook is the **breakfast cook**. This worker is skilled at quickly and efficiently turning out egg dishes and other breakfast items to order.

By contrast, establishments such as school cafeterias may do no cooking to order at all. Stations and assignments are based on the requirements of quantity preparation rather than cooking to order.

SKILL LEVELS

The preceding discussion is necessarily general because there are so many kinds of kitchen organizations. Titles vary also. The responsibilities of the worker called the ***second cook***, for example, are not necessarily the same in every establishment. Escoffier's standardized system has evolved in many directions.

One title that is often misunderstood and much abused is ***chef***. The general public tends to refer to anyone with a white hat as a chef, and people who like to cook for guests in their homes refer to themselves as amateur chefs.

Strictly speaking, the term ***chef*** is reserved for one who is ***in charge of a kitchen*** or a part of a kitchen. The word ***chef*** is French for "chief" or "head." Studying this book will not make you a chef. The title must be earned by experience not only in preparing food but also in managing a staff and in planning production. New cooks who want to advance in their careers know they must always use the word ***chef*** with respect.

Skills required of food production personnel vary not only with the job level but also with the establishment and the kind of food prepared. The director of a hospital kitchen and the head chef in a luxury restaurant need different skills. The skills needed by a short-order cook in a coffee shop are not exactly the same as those needed by a production worker in a school cafeteria. Nevertheless, we can group skills into three general categories:

1. ***Supervisory.*** The head of a food-service kitchen, whether called ***executive chef, head chef, working chef***, or ***dietary director***, must have management and supervisory skills as well as a thorough knowledge of food production. Leadership positions require an individual who understands organizing and motivating people, planning menus and production procedures, controlling costs and managing budgets, and purchasing food supplies and equipment. Even if he or she does no cooking at all, the chef must be an experienced cook in order to schedule production, instruct workers, and control quality. Above all, the chef must be able to work well with people, even under extreme pressure.
2. ***Skilled and technical.*** While the chef is the head of an establishment, the cooks are the backbone. These workers carry out the actual food production. Thus, they must have knowledge of and experience in cooking techniques, at least for the dishes made in their own department. In addition, they must be able to function well with their fellow workers and to coordinate with other departments. Food production is a team activity.
3. ***Entry level.*** Entry-level jobs in food service usually require no particular skills or experience. Workers in these jobs are assigned such work as washing vegetables and preparing salad greens. As their knowledge and experience increase, they may be given more complex tasks and eventually become skilled cooks. Many executive chefs began their careers as pot washers who got a chance to peel potatoes when the pot sink was empty.

Beginning in an entry-level position and working one's way up with experience is the traditional method of advancing in a food-service career. Today, however, many cooks are graduates of culinary schools and programs. But even with such an education, many new graduates begin at entry-level positions. This is as it should be and certainly should not be seen as discouragement. Schools teach general cooking knowledge, while every food-service establishment requires specific skills according to its own menu and its own procedures. Experience as well as theoretical knowledge is needed to be able to adapt to real-life working situations. However, students who have

studied and learned well should be able to work their way up more rapidly than beginners with no knowledge at all.

OTHER PROFESSIONAL OPPORTUNITIES

Not all those who train to be professional culinarians end up in restaurant careers. Professional cooking expertise is valuable in many callings. The following are just a few of the employment opportunities available in addition to standard cooking positions. Most of these require advanced training in other fields in addition to food production:

- Hospitality management in hotels, restaurants, large catering companies, and other organizations with a food-service component
- Product development and research for food manufacturers
- Product sales representatives for food and beverage distributors
- Product sales representatives for equipment companies
- Restaurant design and consulting
- Food styling for photography in books, magazines, and other publications, as well as for food packaging and marketing materials
- Food writing for newspapers, magazines, food industry journals, and other publications—not only restaurant criticism but also analysis and reporting on food-related topics such as nutrition and health, agriculture, and food supply
- Training the next generation of chefs in culinary schools and in large hospitality companies with in-house training programs

STANDARDS OF PROFESSIONALISM

What does it take to be a good food-service worker?

The emphasis of a food-service education is on learning a set of skills. But in many ways, ***attitudes*** are more important than skills because a good attitude will help you not only learn skills but also persevere and overcome the many difficulties you will face.

The successful food-service worker follows an unwritten code of behavior and set of attitudes we call **professionalism**. Let's look at some of the qualities a professional must have.

Positive Attitude toward the Job

To be a good professional cook, you have to like cooking and want to do it well. Being serious about your work doesn't mean you can't enjoy it. But the enjoyment comes from the satisfaction of doing your job well and making everything run smoothly.

Every experienced chef knows the stimulation of the rush. When it's the busiest time of the evening, the orders are coming in so fast you can hardly keep track of them, and every split second counts—then, when everyone digs in and works together and everything clicks, there's real excitement in the air. But this excitement comes only when you work for it.

A cook with a positive attitude works quickly, efficiently, neatly, and safely. Professionals have pride in their work and want to make sure it is something to be proud of.

Pride in your work and in your profession is important, but humility is important too, especially when you are starting out. Sometimes new culinary school graduates arrive on the job thinking they know everything. Remember that learning to cook and learning to manage a kitchen is a lifelong process and that you are not yet qualified to be executive chef.

The importance of a professional attitude begins even before you start your first job. The standard advice for a successful job interview applies to cooks as well as to office professionals: Dress and behave not for the group you belong to but for the group you want to join. Arrive neat, clean, appropriately dressed, and on time. Get noticed for the right reasons. Carry this attitude through every day on the job.

Staying Power

Food service requires physical and mental stamina, good health, and a willingness to work hard. The pressure can be intense and the hours long and grueling. You may be working evenings and weekends when everyone else is playing. And the work can be monotonous. You might think it's drudgery

to hand-shape two or three dozen dinner rolls for your baking class, but wait until you get that great job in the big hotel and are told to make 3,000 canapés for a party.

Overcoming these difficulties requires a sense of responsibility and a dedication to your profession, to your coworkers, and to your customers or clients. Dedication also means staying with a job and not hopping from kitchen to kitchen every few months. Sticking with a job at least a year or two shows prospective employers you are serious about your work and can be relied on.

Ability to Work with People

Few of you will work in an establishment so small you are the only person on the staff. Food-service work is teamwork, and it's essential to be able to work well on a team and to cooperate with your fellow workers. You can't afford to let ego problems, petty jealousy, departmental rivalries, or feelings about other people get in the way of doing your job well. Today's kitchens hold people of many races, nationalities, and origins, some of whom speak languages different from yours. You have to be able to work on the same team as everyone. In the old days, many chefs were famous for their temper tantrums. Fortunately, self-control is more valued today.

Eagerness to Learn

There is more to learn about cooking than you will learn in a lifetime. The greatest chefs in the world are the first to admit they have more to learn, and they keep working, experimenting, and studying. The food-service industry is changing rapidly, so it is vital to be open to new ideas. No matter how good your techniques are, you might learn an even better way.

Continue to study and read. Seek extra work that gives you the opportunity to learn from people with more experience. For example, if you are working on the hot line in a restaurant, ask the pastry chef if you could come in early, on your own time, to help out and, in the process, gain new knowledge and experience.

Many culinary schools and programs have continuing education programs that can help you develop new skills. Professional associations such as the American Culinary Federation (ACF), the Canadian Culinary Federation – Fédération Culinaire Canadienne (CCFCC), and the International Association of Culinary Professionals (IACP) provide opportunities for learning as well as for making contacts with other professionals. The ACF, as well as other professional organizations such as the Retail Bakers of America (RBA) and the International Food Service Executives Association (IFSEA), sponsors certification programs that document a professional's skill level and encourage ongoing study.

A Full Range of Skills

Most people who become professional cooks do so because they like to cook. This is an important motivation, but it is also important to develop and maintain other skills necessary for the profession. To be successful, a cook must understand and manage food costs and other financial matters, manage and maintain proper inventories, deal with purveyors, and understand personnel management.

Experience

One of our most respected chefs said, "You don't really know how to cook a dish until you have done it a thousand times."

There is no substitute for years of experience. Studying cooking principles in books and in schools can get your career off to a running start. You may learn more about basic cooking theories from your chef instructors than you could in several years of working your way up from washing vegetables. But if you want to become an accomplished cook, you need practice, practice, and more practice. A diploma does not make you a chef.

Dedication to Quality

Many people think only a special category of food can be called ***gourmet food***. It's hard to say exactly what that is. Apparently, the only thing so-called gourmet foods have in common is high price.

The only distinction worth making is between well-prepared food and poorly prepared food. There is good roast duckling à l'orange and there is bad roast duckling à l'orange. There are good hamburgers and French fries, and there are bad hamburgers and French fries.

Whether you work in a top restaurant, a fast-food restaurant, a college cafeteria, or a catering house, you can do your job well, or not. The choice is yours.

High quality doesn't necessarily mean high price. It costs no more to cook green beans properly than to overcook them. But in order to produce high-quality food, you must want to. It is not enough to simply know how.

Good Understanding of the Basics

Experimentation and innovation in cooking are the order of the day. Brilliant chefs are breaking old boundaries and inventing dishes that would have been unthinkable years ago. There is apparently no limit to what can be tried.

However, the chefs who seem to be most revolutionary are the first to insist on the importance of solid grounding in basic techniques and in the classic methods practiced since Escoffier's day. In order to innovate, you have to know where to begin.

As a beginner, knowing the basics will help you take better advantage of your experience. When you watch a practiced cook at work, you will understand better what you are seeing and will know what questions to ask. In order to play great music on the piano, you first must learn to play scales and exercises.

That's what this book is about. It's not a course in French cooking or American cooking or gourmet cooking or coffee shop cooking. It's a course in the basics. When you finish the book, you will not know everything. But you should be ready to take good advantage of the many rewarding years of food-service experience ahead of you.

KEY POINTS TO REVIEW

- What are the major stations in a classical kitchen? What are their responsibilities?
- How do the size and type of a food-service operation affect how the kitchen is organized?
- What are the three basic skill levels of modern kitchen personnel?
- What are eight personal characteristics that are important to the success of a food-service professional?

TERMS FOR REVIEW

Marie-Antoine Carême
Georges-Auguste Escoffier
nouvelle cuisine
sustainable agriculture
farm-to-table
fusion cuisine
sous vide
molecular gastronomy
chef
executive chef
chef de cuisine
sous chef
station chef
saucier
poissonier
entremetier
rôtisseur
grillardin
garde manger
pâtissier
tournant
aboyeur
working chef
line cook
short-order cook
breakfast cook
professionalism

QUESTIONS FOR DISCUSSION

1. Escoffier is sometimes called the father of modern food service. What were his most important accomplishments?
2. Discuss several ways in which modern technology has changed the food-service industry.
3. Discuss how an emphasis on high-quality ingredients beginning in the late twentieth century has influenced cooks and cooking styles.
4. What is fusion cuisine? Discuss how successful chefs make use of international influences.
5. What is the purpose of kitchen organization? Is the classical system of organization developed by Escoffier the best for all types of kitchens? Why or why not?
6. True or false: A cook in charge of the sauce and sauté station in a large hotel must have supervisory skills as well as cooking skills. Explain your answer.
7. True or false: If a culinary arts student in a professional school studies hard, works diligently, gets top grades, and shows real dedication, he or she will be qualified to be a chef upon graduation. Explain your answer.