Chapter - II

Introduction to Equipment

POTS, PANS, AND CONTAINERS

METALS AND CONDUCTIVITY

A good cooking utensil distributes heat evenly and uniformly. A poor cooking utensil develops hot spots that are likely to burn or scorch the food being cooked. Two factors affect a pan's ability to cook evenly:

1. *Thickness of the metal*. A heavy-gauge pot cooks more evenly than one made of thin metal. Thickness is most important on the bottom.
2. *Kind of metal*. Different metals have different conductivity, which means the speed at which they transfer or disperse heat.

The following materials are used for cooking equipment:

- *Aluminum* is used for most cooking utensils in food service kitchens. It is a good conductor, and its light weight makes pots and pans easy to handle. Because it is a relatively soft metal, it should not be banged around or abused. Do not use aluminum for storage or for long cooking of strong acids because it reacts chemically with many foods. Also, it tends to discolor light colored foods such as sauces, especially if they are stirred or beaten with a metal spoon or whip.
- *Copper*, the best heat conductor of all, was once widely used for cooking utensils. However, it is extremely expensive and requires a great deal of care. In addition, it is very heavy. Today it is used mostly for show, although a few high end restaurants use it for cooking as well. Copper reacts chemically with many foods to create poisonous compounds, so copper pans must be lined with another metal, such as tin or stainless steel.
- *Stainless steel* is a poor heat conductor. Cooking pots and pans made of it tend to scorch foods easily because the heat does not disperse

throughout the pan quickly and evenly. Stainless steel is ideal for storage containers because it does not react with foods as aluminum does. It is also used for low-temperature cooking or holding equipment, such as steamer pans and counter pans, where scorching or hot spots are not a problem. Stainless-steel pots and pans are available with a heavy layer of copper or aluminum bonded to the bottom. Heavy aluminum pans may also be lined with stainless steel on the inside, or on both the inside and outside. This feature gives the advantages of stainless steel (its hardness, durability, non-reactivity with acid foods, and non-discoloration of light sauces) with the heat-conducting qualities of copper or aluminum. These pans are usually expensive.

- *Cast iron* is a favorite material with many chefs because of its ability to distribute heat evenly and to maintain high temperatures for long periods. It is used in griddles and heavy skillets. Cast iron cracks easily if dropped. It rusts quickly unless kept properly conditioned and dry.

- *Porcelain enamel-lined* pans should not be used. In fact, they are forbidden by some health departments. They scratch and chip easily, providing good hiding places for bacteria. Also, certain kinds of gray enamel can cause food poisoning if chipped.

- *Nonstick plastic-type coatings*, known by brand names including Teflon and Silverstone, provide a slippery finish, but one that requires a lot of care because it is easily scratched. Do not use metal spoons or spatulas with this equipment. Many chefs keep a set of nonstick egg pans and use them for no other purpose. Because more customers are requesting low-fat foods, nonstick coatings are increasing in popularity. They enable cooks to sauté foods with little or no added fat.

POTS AND PANS AND THEIR USES

1. Stockpot.

A large, deep, straight-sided pot for preparing stocks and simmering large quantities of liquids. Stockpots with spigots allow liquid to be drained off without disturbing the solid contents or lifting the pot. (liters).

2. Brazier.

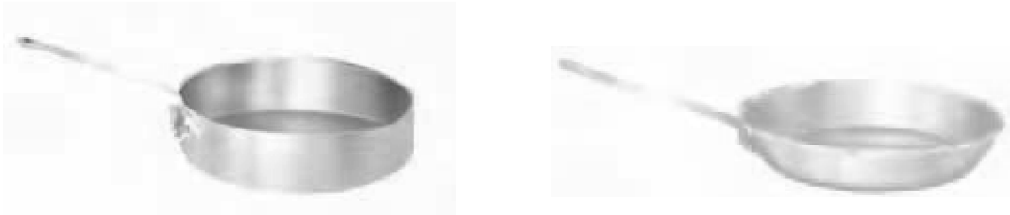
A round, broad, shallow, heavy-duty pot with straight sides. Used for browning, braising, and stewing meats. Sizes:11 to 30 quarts (liters).

3. Saucepan.

Similar to a small, shallow, light saucepot, but with one long handle instead of two loop handles. May have straight or slanted sides. Used for general range top cooking.Sizes:1**1/2** to 15 quarts (liters).

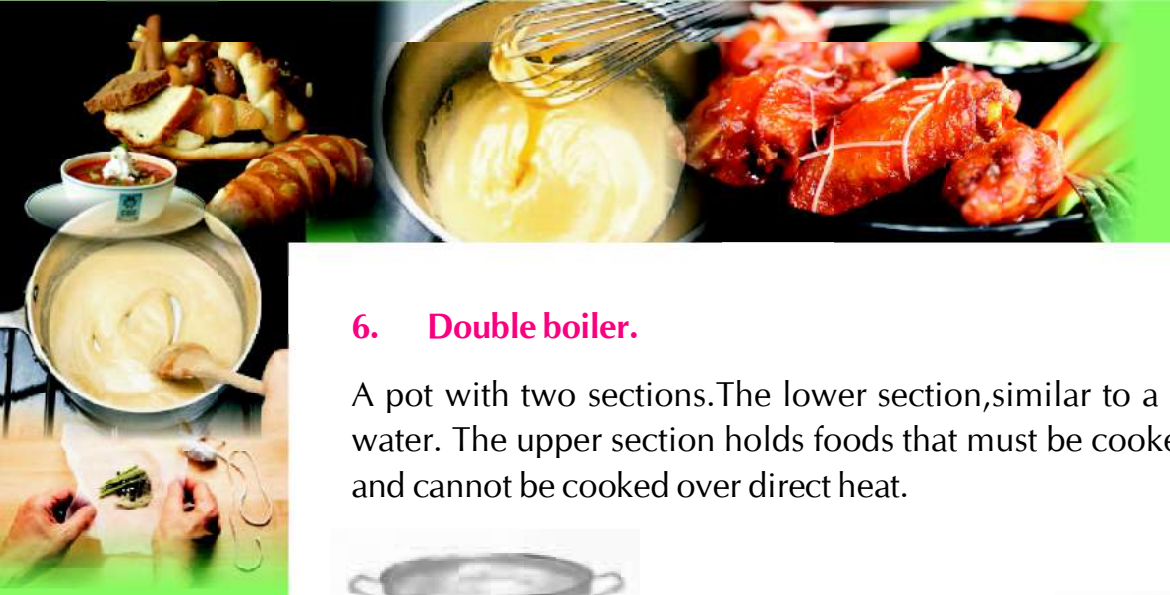
4. Sauté pan, straight-sided.

Similar to a shallow, straight-sided saucepan, but heavier. Used for browning, sautéing, and frying. Because of its broad surface area, the sauté pan is used for cooking sauces and other liquids when rapid reduction is required.



5. Sauté pan, slope-sided.

Also called fry pan. Used for general sautéing and frying of meats, fish, vegetables, and eggs. The sloping sides allow the cook to flip and toss items without using a spatula, and they make it easier to get at the food when a spatula is used.Sizes:6 to 14 inches (160 to 360 mm) top diameter.



6. Double boiler.

A pot with two sections.The lower section,similar to a stockpot,holds boiling water. The upper section holds foods that must be cooked at low temperatures and cannot be cooked over direct heat.

7. Bake pan.

A rectangular pan about 2 inches (50 mm) deep. Used for general baking. Available in a variety of sizes.

8. Roasting pan.

A large rectangular pan, deeper and heavier than a bake pan. Used for roasting meats and poultry.

9. Bain-marie insert, usually called simply bain-marie.

A tall, cylindrical stainless-steel container. Used for storage and for holding foods in a bain-marie (water bath). Sizes: 1 to 36 quarts (liters).

10. Stainless-steel bowl.

A round-bottomed bowl. Used for mixing, whipping, and producing hollandaise, mayonnaise, whipped cream, and egg white foams. Round construction enables whip to reach all areas.Available in many sizes.

KNIVES, HAND TOOLS, AND SMALL EQUIPMENT

KNIFE MATERIALS

The metal that a knife blade is made of is an important consideration, as the metal must be able to take and hold a very fine edge.

1. **Carbon steel** was for many years the traditional favorite because it can be honed to an extremely sharp edge. Its disadvantages are that it corrodes and discolors easily, especially when used with acid foods and onions. Also, it discolors some foods (such as hard-cooked eggs) and may leave a metallic taste. Because of these disadvantages, it has given way to high-carbon stainless steel (described in item 3 below), which is now the preferred material for the best knives.

2. **Traditional stainless-steel alloys** will not rust or corrode, but they are much harder to sharpen than carbon steel. Stainless steel is used mostly for low-cost, lightweight knives.

3. **High-carbon stainless steel** is a relatively new alloy that combines the best aspects of carbon steel and stainless steel. It takes an edge almost as well as carbon steel, and it will not rust, corrode, or discolor. Knives made of this material are highly prized and relatively expensive.

KNIFE HANDLES

The **tang** is the portion of the metal blade that is inside the handle.The highest-quality, most durable knives have a **full tang**, which means that the tang runs the full length of the handle.

Knives, Hand Tools, and Small Equipment

Scoop Sizes

KNIVES AND THEIR USES

1. **French knife or chef's knife.**

Most frequently used knife in the kitchen, for general-purpose chopping, slicing, dicing, and so on. The blade is wide at the heel and tapers to a point. Blade

length of 10 inches (260 mm) is most popular for general work. Larger knives are for heavy cutting and chopping. Smaller blades are for more delicate work. This is your most important tool, so you must learn to handle it and care for it well.

2. Utility knife or salad knife.

A narrow, pointed knife 6 to 8 inches (160 to 200 mm) long. Used mostly for pantry work, cutting and preparing lettuce, fruits, and so on. Also useful for carving roast chicken and duck.

3. Paring knife.

A small pointed blade 2 to 4 inches (50 to 100 mm) long. Used for trimming and paring vegetables and fruits.

4. Boning knife.

A thin, pointed blade about 6 inches (160 mm) long. Used for boning raw meats and poultry. Stiff blades are used for heavier work. Flexible blades are used for lighter work and for filleting fish.

5. Slicer.

A long, slender, flexible blade up to 14 inches (360 mm) long. Used for carving and slicing cooked meats.

6. Serrated slicer.

Like a slicer, but with a serrated edge. Used for cutting breads,cakes,and similar items.

7. Butcher knife.

A heavy, broad, slightly curved blade. Used for cutting, sectioning, and trimming raw meats in the butcher shop.

8. Scimitar or steak knife.

A curved,pointed blade.Used for accurate cutting of steaks.

9. Cleaver.

A very heavy, broad blade. Used for cutting through bones.

10. Oyster knife.

A short, rigid, blunt knife with a dull edge. Used for opening oysters.

11. Clam knife.

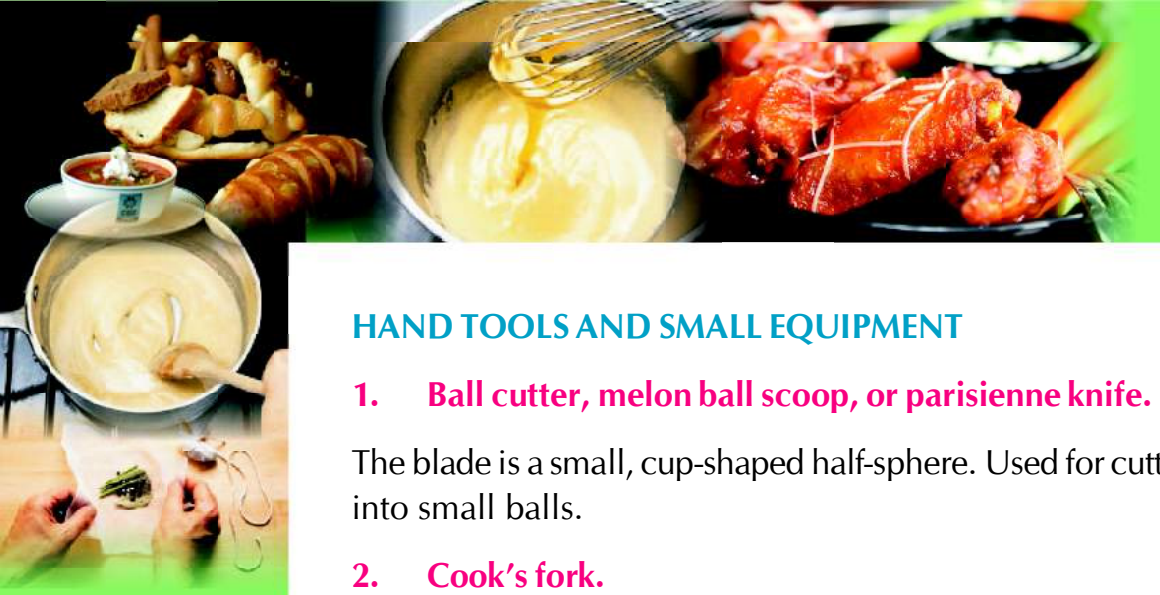
A short, rigid, broad-bladed knife with a slight edge. Used for opening clams.

12. Vegetable peeler.

A short tool with a slotted, swiveling blade.Used for peeling vegetables and fruits.

13. Cutting board.

An important partner to the knife. Hardwood boards are favored by many chefs. Hard rubber or plastic boards are thought to be more sanitary, but there is some evidence that bacteria survive longer on plastic and rubber than on wood. Cutting boards must be kept very clean.



HAND TOOLS AND SMALL EQUIPMENT

1. Ball cutter, melon ball scoop, or parisienne knife.

The blade is a small, cup-shaped half-sphere. Used for cutting fruits and vegetables into small balls.

2. Cook's fork.

A heavy, two-pronged fork with a long handle. Used for lifting and turning meats and other items. Must be strong enough to hold heavy loads.

3. Straight spatula or palette knife.

A long, flexible blade with a rounded end. Used mostly for spreading icing on cakes and for mixing and bowl scraping.

4. Offset spatula.

A broad blade, bent to keep the hand off hot surfaces. Used for turning and lifting eggs, pancakes, and meats on griddles, grills, sheet pans, and so on. Also used as a scraper to clean benches and griddles.

5. Rubber spatula or scraper.

A broad, flexible rubber or plastic tip on a long handle. Used to scrape bowls and pans. Also used for folding in egg foams or whipped cream.

6. Bench scraper or dough knife.

A broad,stiff piece of metal with a wooden handle on one edge.Used to cut pieces of dough and to scrape workbenches.

7. Pastry wheel or wheel knife.

A round, rotating blade on a handle. Used for cutting rolled-out doughs and pastry and baked pizza.

8. Spoons: solid, slotted, and perforated.

Large stainless-steel spoons that hold about 3 ounces (90 mL).Used for stirring,mixing,and serving. Slotted and perforated spoons are used when liquid must be drained from solids.

9. Skimmer.

A perforated disk, slightly cupped, on a long handle. Used for skimming froth from liquids and for removing solid pieces from soups, stocks, and other liquids.

10. Tongs.

Spring-type or scissors-type tools used to pick up and handle foods.

11. Wire whip.

Loops of stainless-steel wire fastened to a handle. There are two kinds of whips:

- Heavy whips are straight, stiff, and have relatively few wires. Used for general mixing, stirring, and beating, especially heavy liquids.
- Balloon whips or piano-wire whips have many flexible wires. Used for whipping eggs, cream, and hollandaise, and for mixing thinner liquids.

12. China cap.

A cone-shaped strainer. Used for straining stocks, soups, sauces, and other liquids. Pointed shape allows the cook to drain liquids through a relatively small opening.

13. Fine china cap or chinois

(shee-nwah).

A china cap with very fine mesh. Used when great clarity or smoothness is required in a liquid.

14. Strainer.

A round-bottomed,cup-shaped tool made of screen-type mesh or perforated metal.Used for straining pasta, vegetables,and so on.

15. Sieve.

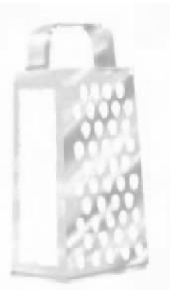
A screen-type mesh supported in a round metal frame. Used for sifting flour and other dry ingredients.

16. Colander.

A large perforated bowl made of stainless steel or aluminum. Used to drain washed or cooked vegetables, salad greens, pasta, and other foods.

17. Food mill.

A tool with a hand-turned blade that forces foods through a perforated disk. Interchangeable disks produce different coarseness or fineness. Used for puréeing foods.



18. Grater.

A four-sided metal box with grids of varying sizes. Used for shredding and grating vegetables,cheese,citrus rinds,and other foods.

19. Mandoline.

A manual slicing implement consisting of blades fitted in a flat metal or wood framework. Folding legs position the mandoline on the worktable at a 45-degree angle for use. Levers allow the blades to be adjusted to control the thickness of the slices. A traditional mandoline has a flat blade and a serrated blade. Additional blades can be used in combination with the flat blade to cut julienne and batonnet. The serrated blade is used to cut gaufrette or waffle slices.

20. Pastry bag and tubes.

Cone-shaped cloths or plastic bags with an open end that can be fitted with metal tubes or tips of various shapes and sizes. Used for shaping and decorating with items such as cake icing, whipped cream, duchesse potatoes, and soft dough.

21. Pastry brush.

Used to brush items with egg wash, glaze, etc.