THE Cutlery STORY

FROM STONE AGE TO STEEL AGE

The Cutlery Story

A Brief History of the Romance and Manufacture
of Cutlery
from the Earliest Times to Modern Methods of Manufacture

Pocket Knives - - - Sportsman's Knives
Professional and Industrial Knives
and
Household Cutlery

with a
Short Summary on the Selection and Care of Knives
and
Minimum Requirements of Today's Kitchen

by
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FOREWORD

Cutlery - Indispensable

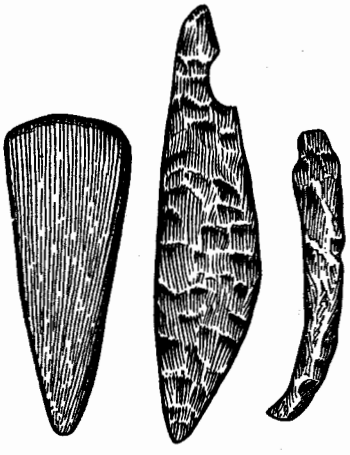
Have you ever stopped to consider what life would be like if we had no knives?

Even a casual glance at the history of man reveals that the invention and perfection of the knife, which is in effect to say all cutting tools, freed man from endless toil, made possible his thousand and one uses of natural resources, and thereby his evolution from savage to contemporary man.

Modern industry, which makes the things with which we work and live, uses knives every hour of the day. The individual workman would be helpless without cutting tools. The housewife, without whom the home would have little meaning, uses a knife on the average of 32 times a day.

It is not surprising that cutlery, which we take for granted almost without second thought, is indispensable!

From Stone Knives to Table Cutlery

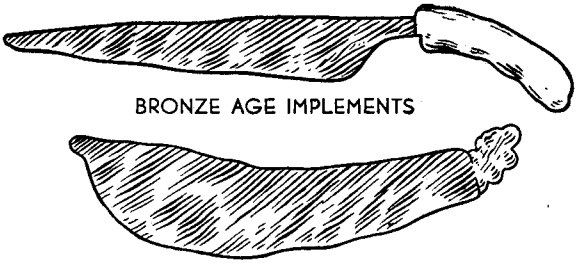


STONE AGE KNIVES

Some 175,000 years ago the uncouth, hairy Dawn Man made his knives and axes of stone. For perhaps 15,000 years he developed and improved his crude stone implements. Then he substituted flint for other coarser stone and employed great skill in chipping, grinding, and polishing this material into knives, axes, spear points, and many other articles that made living easier and better.

Just when the art of cookery became common practice is not clearly established, but evidence of cooking fires has been found among the ruins of the Acheulian era, roughly 75,000 years ago. The transition from raw to cooked food set up a chain of events which advanced civilization. A fire once started had to be kept burning, which meant the establishment of more or less headquarters; the women were assigned the task of keeping the fire — which no doubt gave rise to the idea that woman's place is in the home, and certainly to the beginning of community life.

And probably the maintenance of constant fires and sustained heat over a long period led to the discovery of metals which were melted out of the hearthstones themselves, which in turn led to primitive smelting. For man discovered copper and tin. He made knives out of copper and then found that if he added tin to the



BRONZE AGE IMPLEMENTS

molten copper he had a much harder metal — and so the Bronze Age was born, about 3000 B.C., one of ancient man's greatest advances, made because he wanted a lasting edge on his cutlery.

The Iron Age

The next great step in cutlery art resulted from the discovery of iron. It is believed that iron was discovered some 2,000 years before the close of the Bronze Age but was slow in coming into general usage, because of the greater heat required to smelt the ore and difficulty in working it, and the Iron Age therefore is generally accepted as beginning about 1000 B.C. With the discovery of iron began the slow development of smelting and forging and the experiments which resulted in the making of steel. For steel, which has revolutionized human life and which is the very core of modern industry, was the result of man's unceasing efforts to perfect knives and other weapons and was first used only for them.

Steel is a combination of iron and carbon, and the control of carbon and the refining — to practical elimination — of other foreign elements are the most important steps in steel making. In early times there were wide variations in the finished product, and in the 13th and 14th centuries much romance sprang up around certain forges. The skill of some steel makers was cloaked in greater secrecy than has proved the case with our atom bomb production. Mythology gives us "Excalibur," the sword

made famous by King Arthur, who pulled it from a stone; and "Balmung," which Siegfried with the help of one of the Gods forged three times, and with it cut his great anvil in two with one stroke.

Ancient Heat Treating

It was recognized by the ancients that if steel cooled slowly it was relatively soft and ductile whereas if it was cooled quickly it became hard and brittle. We read that one of the early secrets of hardening was to heat the forged blade to a "cherry red," then plunge it through the heart of a Nubian slave. Later, more humanely, it was averred that a red-headed boy near the quenching tank would be equally effective.

It is interesting to note that the Hittites, a white race in Asia Minor, supposedly began working the iron ore deposits along the Black Sea even before 1300 B.C. and were the earliest distributors of iron, which they introduced first into Assyria. The Assyrian army was possibly the first to be equipped with weapons of iron. Metal for the famous Damascus weapons was made in India, and Damascus steel was produced by laminating strips of high carbon steel with milder steel in layers, a type of steel structure still used in axes and some shears in which the cutting edge is high carbon steel backed up by a low carbon steel and welded to it.

The Dawn of Table Cutlery

During the early Christian era, although the perfection of larger weapons was of major importance, the dagger, or sheath knife, was a required piece of personal equipment. This weapon was the forerunner of modern table cutlery.

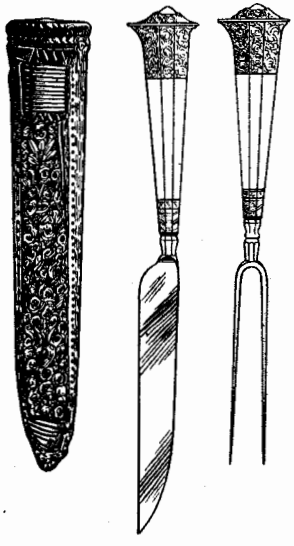
The dagger as a table knife apparently came into its own in the 15th century, which produced some of the finest examples of the craftsman's art, and has been carried over into modern times. The ordinary citizen's girdle dagger was an all-purpose knife equally effective for cutting a throat or carving a joint. Only the nobility carried daggers specially designed for table use, and these were triumphs of the cutler's and jeweller's art, with handles inlaid with precious stones, carved ivory, decorated porcelain, and rare metals, their sheaths of tooled leather embossed and metal-inlaid. The knife reflected the man — and the culture of the Renaissance.

BANQUET DAGGER

The knife changed table manners. An Italian writer in 1530 notes that "it is not good manners to lick your greasy fingers — and salt should be taken from the salt-cellar with the point of the knife, from which the grease has been removed." Good knives were held in such esteem that "pairs of knives" appear in the inventories of estates drawn at this time.

The invention of the fork made pointed table knives unnecessary, although it is said the Cardinal Richelieu had his table knives ground to a round point because one of his frequent guests picked his teeth with the point of his knife. At any rate, Louis XIV in 1669 made it illegal to carry pointed knives or for innkeepers to place them on the table.

During the 16th century table knives were curved and widened to better hold food — green peas or beans possibly.



SHEATH, KNIFE and 2-PRONG FORK

Birth of the Pocket or Clasp Knife

The forerunner of the pocket knife is found in examples of the early table knives, the blades of which folded into the handles. A pocket knife is listed in an inventory dated 1380, and there are clasp or spring knives mentioned as early as 1650. The development of the art of writing, which was done at first entirely with goose-quill pens, gave rise to the "pen-knife" for trimming the quill. We also find the name "jackknife" used before 1600.

One sees that man's search for better knives is as old as his search for better living, and that the history of cutlery paralleled, reflected and has indeed shaped the history of man.

The Cutlery Guilds

The concentrated manufacture of cutlery seems to have had its greatest development in England. As early as 1298 the Cutler's Guild of the London Company tried to suppress the illegal sale of "foreign cutlery"— by which was meant knives made by another guild, an indication of the power of these early associations or trade unions of craftsmen.

The Cutlery Guilds, of which the London, Hallamshire, and

Sheffield were the most powerful, prescribed that a man to become a journeyman or master cutler should serve seven years' apprenticeship; that apprentices' hours of work should be from 6 a.m. to 9 p.m.; and that when they had served their time, apprentices should be paid fifty pounds ($25.00), which was considered sufficient to set a man up as an independent master.

The greatest concentration of cutlers appears to have been in the Sheffield area, where master cutlers were so numerous and powerful that they controlled the lives of all the citizenry. The guild system systematized the fundamental processes which are still the foundation of good cutlery manufacture. Modern changes and improvements have been due mostly to the greater knowledge we now have of materials used, of more accurate control of the qualities of materials, and of precision instruments for the regulation of heating and other processes.

The Making of a Knife

Although the quality of the steel in a piece of cutlery is of prime importance, the use of the finest steel is not in itself a guarantee of quality in the finished product. A forged blade must undergo at least 12 separate operations before it is ready for the handle, each one of which has a positive effect on the final result.

The chief concern of the pioneer cutler was the carbon content of his steel and the amount of impurities present after forging. Carbon, within certain maximum and minimum limits, gives iron its hardening qualities. The first successful production of steel on a commercial basis is credited to a clock-maker searching for a better material for his clock springs in 1740, who, by melting iron bars in a crucible and accurately measuring other ingredients,

produced more uniform ingots than any previously made. His process, with various refinements, was used to make fine cutlery steel as recently as 1940 but has now been largely superseded by the electric furnace, which produces the finest steel in the history of cutlery. It is rapidly replacing cutlery steel made by the Bessemer and open-hearth process. Accuracy of control in the electric furnace results in steel which has enabled the American cutlery industry to assume world leadership.

FORGERS OF OLDEN TIMES

In ancient times steel came to the cutler in square bars. To flatten these to the required thickness, they were heated to a high heat and forged or drawn down to slightly over the required finished gauge. In Sheffield, this was done by two men; the forger, who held the red hot bar with tongs on the anvil, twisting and turning it; and the hammer-man, who beat it with a heavy hammer. This was a slow process, and frequently the bar had to be reheated several times before it was reduced to the required thickness.

The mechanically operated beam hammer was invented early in the 19th century but the cutlery guilds would not permit its use for forging cutlery, a fact largely responsible for the birth of the American cutlery industry. Although certain types of knives were being made in Southbridge, Massachusetts as early as 1818, the first plant for the production of table knives was opened in Greenfield, Massachusetts; and here, freed from guild restrictions, forging was done with the beam hammer, which enabled one forger

to make four times as many blades per hour as two men under the English guild system. Since beam hammers operate with very rapid strokes and reheating is seldom necessary, the finished product was more uniform than hand forging.

Although steel and other raw materials had to be imported, Yankee ingenuity cut the costs of production without sacrificing quality and successfully met Sheffield competition. In 1837 another cutlery plant was opened in Shelburne Falls, Massachusetts, and during the next twenty years several others followed in Connecticut and New York State. While there are a few plants scattered over several states, the cutlery industry in America today is pretty well concentrated in New England, New York and Ohio.

Hardening and Tempering

After the bar of steel has been reduced to gauge it is trimmed, in dies, to shape and is ready for the most critical operation in the making of a blade, heat treating. The blade is first heated to a cherry red — from 1450 to 2000 degrees Fahrenheit according to the type of steel — then rapidly cooled by quenching in either water, oil, or salts. Correct temperatures at both ends of this process are vital. Whereas originally temperature of heat was determined by the color perception of the workman, and his judgment alone determined the temperature of the quench, these are now determined without the hazard of human judgment by precision instruments known as pyrometers, with resulting uniformity in hardness obtained. Steel after quenching is light grey in color and is very hard and brittle. To reduce the brittleness and bring the blade to a workable edge-holding hardness it is reheated slowly at a lower temperature and changes in color first to straw-color, then brown, purple, dark blue, and lastly light blue. Where great hardness is desired, as in a straight razor, the process is checked

when the blade is a pale straw-color, whereas a pocket knife blade is drawn to a purple, and a knife blade, in which flexibility as well as hardness is required, is usually drawn to a pale blue. This process of tempering must be done slowly. Originally, as in hardening, the color perception of the workman was all-important, but now tempering is done in mechanical ovens, eliminating human guesswork and so accurately timed that variations are kept to a minimum.

Grinding

When the blade comes from the tempering oven it is ready for rough grinding. This used to be done on a coarse, natural sand-stone some six feet in diameter and nine inches across. The grinder rode the stone on a heavy wooden saddle, or horsing, which extended slightly beyond the top center of the stone; and the stone revolved away from the grinder. Holding the blade in a wooden jig known as a "flat-stick," and using his arms and shoulders and frequently his entire weight, the grinder "rode" the blade until he reduced the gauge very nearly to that of the finished knife. This was a hazardous occupation for the grinder. Stones sometimes burst with crippling or fatal results. Working with hands and feet soaked with the water used to keep the stone cool, and inhaling dust and spray, only the very husky grinder lasted more than a few years before he contracted what was called "grinders' consumption" — which was phthisis or a type of silicosis. Today rough grinding is done on batteries

ROUGH GRINDING

of four machines run by one operator whose job is to load and unload the "backers" which have replaced the original "flat-stick." And machine grinding has made the product more uniform.

After the rough grind the next step is whettening the blade; another wet grinding operation but done on finer stones than those used for rough grinding. This process removes the rough-grind marks and produces a smooth surface ready for polishing. Today, excepting on the finest knives, and those which are taper ground from handle to point, whettening is done mechanically on what is called a "double header," a machine consisting of two wheels held in a frame so that they are directly opposed to and turning towards each other, one wheel being movable horizontally in the frame and operated by a foot pedal. The operator, holding the back of the blade on a rest, pulls the blade back and forth between the wheels, at the same time bringing the wheels together under pressure by means of the foot pedal. These wheels are surfaced with walrus hide or felt and doped with wax and emery "cake" applied as needed by the operator, and which whetten out the rough-grind marks from both sides of the blade simultaneously.

Blades sold with dull finish get their final polish on the "double-header" with very fine or flour emery. High mirror finish blades go to a polisher with cotton buffs which operate like a washing-machine wringer with rapidly revolving rollers. As these machines have a tendency to roll the edge of the blade, sharpening down to the perfect "V" edge must be done by hand. The better grades of pocket knives are generally hand whettened after mirror finishing.

After the final polishing operation the blade is ready to be mounted. On fixed-blade knives the principal handle materials are rosewood, boxwood, cocobolo, and a few other imported hard-woods; domestic walnut, beech, maple; and, growing in popularity,

a plastic-impregnated wood bearing several trade names, the best known being Pakkawood. Colored plastics, hard rubber, genuine staghorn, water buffalo, and other horns, bone, and mother-of-pearl are also used for handles, the last being used mostly for fine pocket knives, fruit knives, and table knives. Many knife manufacturers get their wood for handles in log or plank form; others are supplied by handle specialists. Considerable skill is required in making the fine-looking handle that will not split or check. Handles are riveted, pushed on, and held by friction, or cemented.

It should be noted finally that good design of both blade and handle is important. One of the earmarks of a good knife is its balance. Its weight should be at the handle end, and when held loosely in the hand it should have a "hang" that is comfortable to the hand and wrist. Proper "hang" is of special importance in the longer knives and is a feature looked for and expected by the professional user.

The Parts of a Knife

The parts of a fixed-blade knife are known as the point, the back, the edge, the choil (or heel), and the tang to which the handle is attached. Some knives, especially table knives, have a bolster between the end of the blade and the tang, some bolsters being forged as integral parts of the blade, others being die-cast of softer metal or made on a screw machine, forced on the tang and held in place by the choil. To add to their grace and appearance many knives have a swage cut on the back.

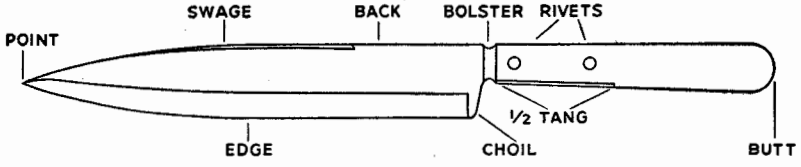


DIAGRAM OF PARTS OF A KNIFE

Generally speaking, there are four kinds of tangs; full tang, which extends to the end of the handle, half tang, flat or "push" tang and round or rat-tail tang. Full or half tang blades fixed with two or more rivets are the least susceptible to being separated from the handle. Except for table knives, the flat tang is used mostly on low priced knives. Flat tang blades for household use are often held only by friction and soon work loose when alternately wet and dried out. The flat tang, however, is wholly successful in industrial knives which never are wet and the handle held firm with a pin driven through the end of the tang. Both the flat and round tang are satisfactory in table knives since the bolster keeps moisture from working down and relieves most of the strain to which the tang is subjected. The flat tang is also satisfactory when a handle such as hard rubber or plastic is moulded on the tang.

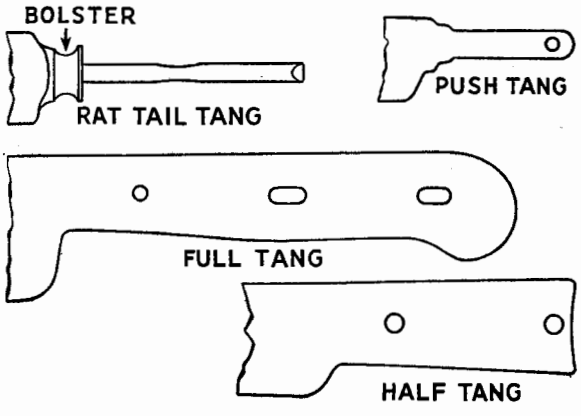


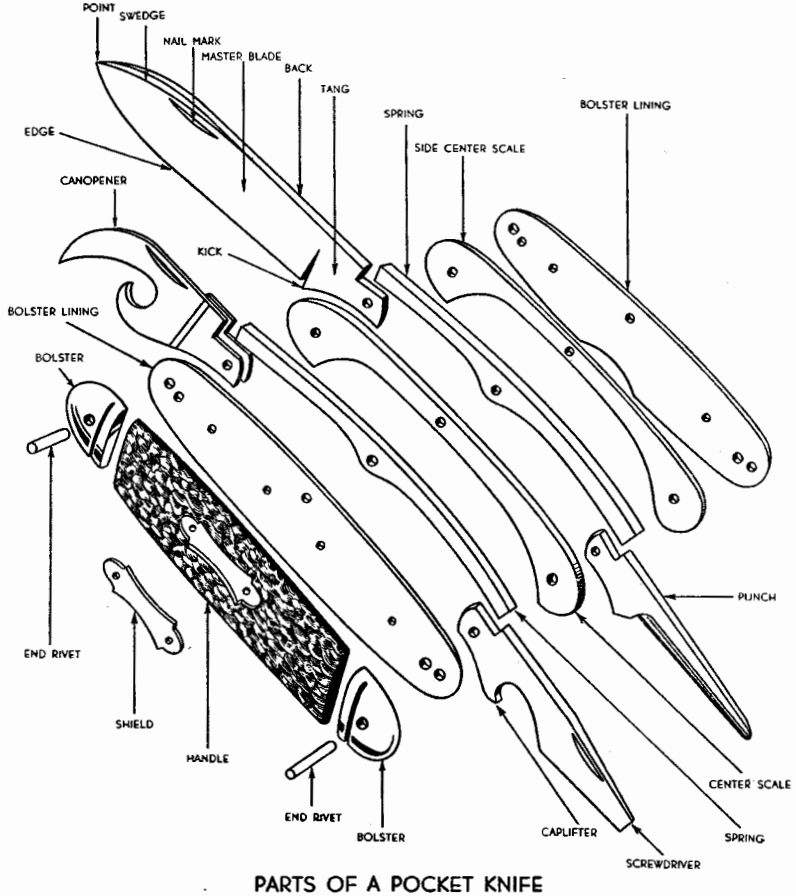
DIAGRAM OF TANGS

Pocket Knives

The pocket knife is assembled with linings and springs besides having outside covers, or handle, attached. It must open and shut smoothly, have correct tension on the springs. In the multiple-bladed knife there are two springs and a divider which complicate assembly and adjustment. Except with mass produced knives, in

the manufacture of which precision tools reduce hand adjustment to a minimum, the assembly and adjustment of a fine pocket knife require great skill and experience.

In pocket knives other factors besides the blades' parts must be considered. Here the greatest strain comes on the bolster, as the strength of a pocket knife depends on the rivet, which acts as a hinge and is anchored to the bolster. The diameter of this rivet is obviously important. The bolsters in a pocket knife are riveted, spot welded, or crimped onto the ends of the linings, which are usually brass, nickel silver, or steel which is used on the lower



PARTS OF A POCKET KNIFE

priced knives. Fine tooling and expert fitting of pocket knife parts are required to make blades open smoothly, fold into the handle at just the right pitch to lie flat, and lie at the right height to leave the nail mark easily accessible.

The Cutting Edge

No one will dispute the fact that the most important test of any cutting tool is how well its blade will take and hold an edge. To make a knife which will hold a good cutting edge the manufacturer must use a steel of high quality, the tempering must be done accurately to obtain the perfect degree of hardness for the particular service the knife is designed to render, and the grinding must be skillfully done so as to reduce to a minimum the resistance to cutting.

Kinds of Steel That Make Good Knives

During the last decade American metallurgists have developed steel which has edge-holding qualities and toughness never before available for knife blades. As previously noted, iron, to have hardening and tempering properties, must contain a percentage of carbon regardless of what other metal alloys are introduced. It is generally accepted that steel which does not have 60 points carbon (with the exception of certain steels which contain chrome, which has hardening qualities also) is not suitable for a knife. Steel used today for knives are supplied with carbon content from 60 to 120 points, those having the higher percentage of carbon being the more difficult to work but having better wearing qualities.

Shortly before World War I the Brearley Patent, a process of combining chromium with a 35 point carbon steel, was developed, introducing steel which when hardened, tempered, and polished

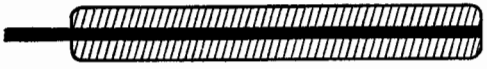
was non-corrosive and stainless. This, about 1920, cutlers began to use extensively for table knife blades and household and other cutlery. Since then not only has the steel structure been improved but stainless steels are now being made that contain as high as 120 points of carbon, and is being used by several manufacturers. This is generally known as High Carbon Stainless.

About 1930 steel mills began the production of a cold-rolled stainless steel which had a reasonably hard surface and did not require heat treating. This came in double beveled strips with its thickest cross-section running down the center and tapering to a thin gauge at the edges. The making of a so-called blade from this steel was very simple. A stamping press and a dry grinding stone were all the equipment necessary to make a very low priced product which, in recent years, has been somewhat improved by grinding — on one side at least — so that it can be whettened and brought to a sharp edge which will give service comparable to its cost.

More recently there have become available new alloy steels containing vanadium and molybdenum, which when added to chromium increase the toughness of the steel and thereby lengthen the life of the blade. Of these the most extensively used today is chrome-vanadium steel, which has stain resisting qualities and, when chrome plated, is practically stainless as long as the protective plating lasts.

We have already described the process of forging, which has an important effect on steel structure, beating out impurities and compacting and making finer the tiny grains or molecules which make up the structure of the material. The grade of the steel is frequently determined by fineness of grain — the finer the grain, the tougher the steel. Hammer forging continued as common practice until the latter part of the 19th century, when sheet stock rolled to gauges approximately the thickness of the finished knife

began to be used. Blades from early sheet stock did not have the same edge-holding qualities as the forged blades, but in recent years mechanical and metallurgical techniques have so improved that there is very little detectable difference between the forged and sheet stock blades, provided heat treating and grinding are comparable. However, there are two schools of thought on the subject. The advocates of forging believe that forging adds greater toughness, while the sheet stock advocates maintain that several passes through the rolling mill will densify the structure just as much as forging and that the more accurate control of the heat during the rolling process makes for greater uniformity in the finished steel. Several of our plants produce blades made by both processes. A forged knife can usually be recognized by the fact that the tang tapers and is thinner at the butt end; sheet stock is uniform gauge for its entire length.



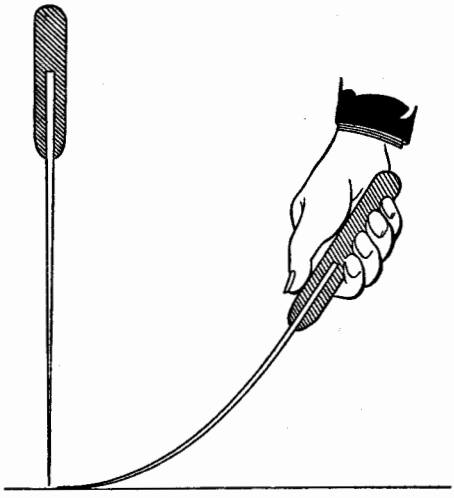
TANG OF FLAT STOCK BLADE

TANG OF FORGED BLADE

Regardless of the quality of its steel, its proper heat treatment, and whether it is forged or not, the ultimate value of a finished blade depends upon the way it is ground. Methods and degrees of grinding differ widely. Grinding can be and usually is the most costly of the various manufacturing steps; and it can be thoroughly done or skimped, for to the untrained eye incorrect grinding is very hard to detect.

For the most perfect cutting edge a knife should be ground to a taper from the handle to the point as well as to the edge. A knife so ground can, if the point is held against a fixed surface, be bent in a perfect diminishing arc from the point to the handle in a degree governed by the flexibility of the blade. Taper grinding

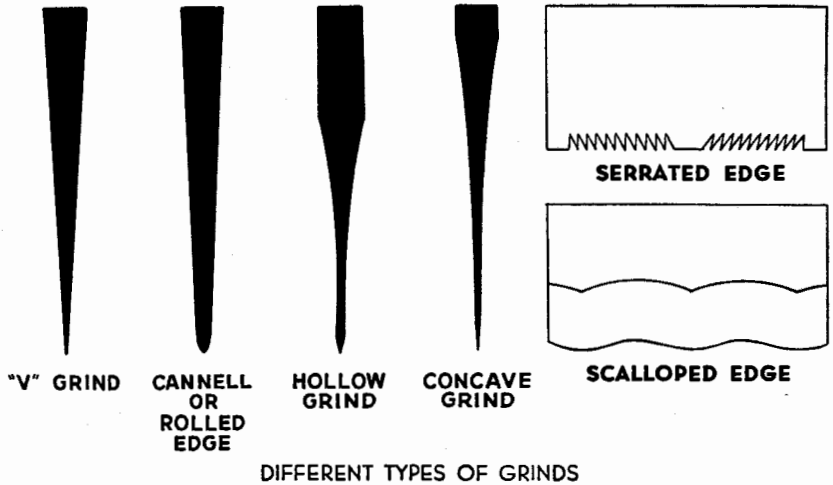
is more costly and is worth it and is found only in the highest grades of knives — especially those used by professionals.



TAPER GRIND and ARC

In general terms there are two major types of grind, commonly referred to as "flat grind" and "hollow" or "concave grind." These in turn break down into four types of edging; the uniform "V" from back to edge, the "cannelled" or rolled edge; the serrated or saw-tooth edge; and the scalloped edge. There are minor variations of these major types made for special purposes.

"V" grind extends from the back to the edge in a flat plane; cannelled is ground almost to the perfect "V" to within about one 32nd of an inch from the edge and then rolled to a cutting edge. Because of its slightly heavier cross-section just back of the edge



DIFFERENT TYPES OF GRINDS

a knife so ground has greater resistance to damage from contact with a hard substance and being twisted.

The degree of hollow grinding differs considerably between the products of the different manufacturers but usually starts below the back of the blade and extends to the edge. A hollow ground blade has a concave area on each side which gradually reduces the thickness of the blade until it reaches its extreme thinness at the edge. A concave ground blade starts nearer the back, which in general grinds the blade thinner giving it a better, longer lived cutting edge than the ordinary hollow ground blade.

Scalloped and saw-tooth edges were originally designed for slicing hot bread but have been found so adaptable to many other slicing operations that they are now used on knives of several lengths and patterns. Some scalloped edge knives have their edges slightly hollow ground to great sharpness. Saw-tooth table knives are becoming popular in certain type restaurants.

It should be noted that hollow grinding is not generally practical for pocket knives although, for some purposes, it is very successfully used. The usual functions of a pocket knife differ from those of a fixed-blade knife as the pocket knife is subjected to side strains and prying operations which a hollow ground knife is not designed to stand. The better pocket knives are ground to a perfect "V" edge where heavy duty serviceability is required.

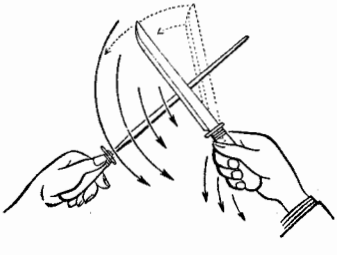
The Knife in the Home

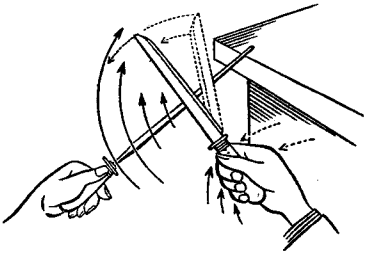
When steel was scarce and good knives a rarity man took pride in his cutlery, valued it highly, and knew how to keep a knife

sharp. And he saw to it that his cutlery equipment was efficiently selected. The modern householder all too often is careless in his selection of knives, leaves his kitchen woefully undersupplied with the right knives, and takes poor care of the knives he has. He forgets the indispensable knife deserves thought both in its purchase and its maintenance.

The cutting edge of a knife requires attention if it is to perform its function efficiently. Regardless of the steel of which it is made and the skill which has gone into its manufacture, a fine cutting edge will give or turn over when brought into contact with a hard surface. Even ordinary slicing tends to turn a fine edge, and when it is turned it appears to be dull.

Have you ever watched your butcher, a professional knife user, when he takes up his knife to cut your meat? Before he makes a cut he gives the edge of his knife a few strokes on his steel. He is not sharpening his knife but re-setting and re-aligning the microscopic teeth which form the cutting edge of any blade, a process which "revives" and makes perfect the cutting edge many times before the edge becomes actually dull and requires sharpening. Every knife user should learn to use a steel and follow the professional practice of always giving a knife a few strokes on the steel before using it. It is a trick readily learned. The conventional method is to hold the steel horizontally slightly slanted away from you in the left hand, hold the knife by the handle in the right hand, rest the edge at the heel lightly near the point of the steel at an angle of about 20 degrees, and draw the blade towards you against the edge and across the steel from heel to point. *Use only light pressure.* Repeat this operation on the other side of the steel with the





other side of the edge. Three or four strokes on each side are enough. Simple, indeed!

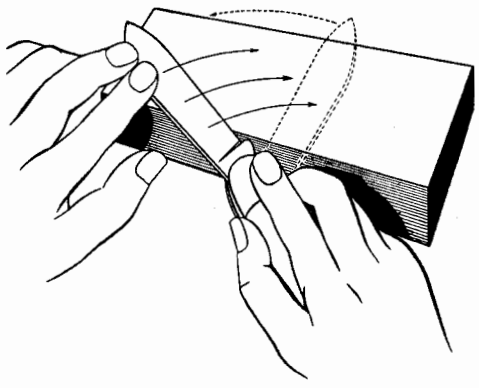
Or you can rest the point of the steel on the edge of a table and draw the blade back and forth only on the top side of the steel, turning the edge of the blade towards you on the up stroke and away from you on the down stroke.

Sharpening is another matter, which some people prefer to leave entirely to the professional but can be done in the home with a little practice. A simple device for sharpening is the abrasive stick or the stone mounted with a wooden handle. The stick is used in a similar manner to the steel and the stone is used to stroke the edge much like sharpening a scythe. With either of these methods the blade is held firmly and more pressure is applied in drawing the stone against the edge. There are several mechanical devices of various degrees of effectiveness with hand operated stones which attach to the wall or table and are turned with a crank. The most effective and fool-proof of these is the electric motor driven sharpener. The mechanical sharpeners which consist of a series of hard steel discs or wheels between which the knife edge is drawn may be used on a cannelled edge knife, but are not recommended for any hollow or "V" edge ground knife. And lastly, there is still no substitute for the old reliable oil stone, coarse on one side and smooth on the other, which takes more time and care but gives the keenest, smoothest edge.

A pocket knife is honed at a less acute angle than a kitchen knife. Although the edge of a pocket knife blade can be re-set with a steel, the oil stone is required for good sharpening.

In using the oil stone, which, as the name implies, is to be first moistened and then kept moistened with a few drops of light oil,

lay the knife blade flat on the stone and then raise the back about an eighth of an inch to get the proper angle, and draw the blade *against* the edge first on one side and then on the other. About twenty strokes on each side will sharpen a knife that is not unusually dull. Use the coarse side for the first eight or ten strokes, then finish it on the smooth side.



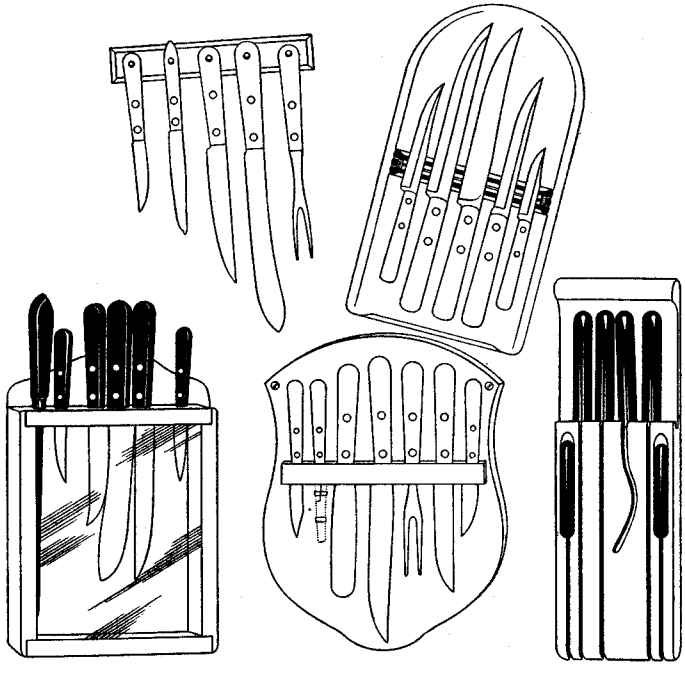
The Way To Store Knives

It is well to remember that tossing a knife loosely into a drawer with other knives and various gadgets does not help the cutting edge. Partition the knife drawer into compartments that will each hold two or three knives. Even better, use the hardwood block cut with slots to hold individual knives or get some one of the very handy knife racks that can be hung on the wall or end of cupboard. Some knives come with a 3/16th inch hole drilled in end of handle that slips over a pin driven into a hardwood strip. One can drill the holes and make his own rack which takes little space and is very handy. Several magnetized holders are available that are very useful. There are many sets to choose from that come with blocks or racks and keep knives well protected.

Keep your knives in the right place, always use the steel on the knife before cutting, and see that it is re-sharpened when it is actually dull.

Minimum Household Equipment

It is unfair to expect the housewife to do her many hours of kitchen work with poor or scanty equipment, and that is especially true of her knives, which she uses constantly. She should be able to take pride in her working cutlery as she does in her table silver, and it should be remembered that good quality does not come cheap. The first requirement of the efficient kitchen is high quality cutlery. Nothing else will give lasting satisfaction.



VARIOUS KINDS OF RACKS

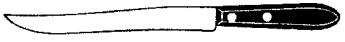
The Basic Six

The second requirement is that the set of kitchen knives be adequate for the several kinds of services knives must perform. And the absolute minimum is what might be called the "Basic Six."

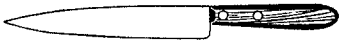
1. A 3 or 3½ inch *Paring Knife.* For a dozen incidental uses for which there is no substitute.

2. A 6 or 7 inch *Utility Knife.* For halving oranges, grapefruit; slicing tomatoes, onions; dicing celery and vegetables.

3. An 8 inch *Narrow Slicer.* For slicing bread, serving hot or cold meat, poultry; shredding cabbage, etc.

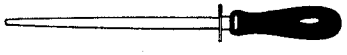


4. An 8 inch *Cook's Knife.* (Sometimes called a French Cook's or Chef's knife.) For carving hot roasts; mincing small quantities of onions, parsley, peppers, etc. For mincing hold tip of knife on slicing board and rock back and forth. Deep choil protects knuckles.



5. A 7 or 8 inch *Long-Handle Pot Fork.* For getting food from kettle; for use as serving fork, etc.

6. An 8 or 10 inch *Sharpening Steel.*

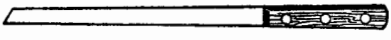


Add to this basic set, as you can, the following eight pieces.

1. *Curved Blade Grapefruit Knife.* For loosening segments from the rind. Useful to remove seed pods from green peppers, or stem core from tomatoes for canning.

2. A 6 inch *Boning Knife.* For many cutting operations such as removing ham bone or boning leg of lamb, etc.

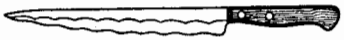
3. A 10 inch *Narrow Ham Slicer.* For easiest slicing of cold meats, slicing bacon, cutting cheese and similar foods.



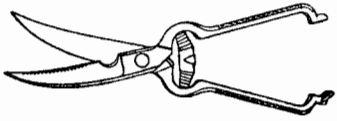
4. An 8 or 10 inch *Flexible Spatula.* For icing cakes, loosening food from pans, turning cakes, etc.

5. A 6 or 7 inch *Light Cleaver.* For mincing, opening lobsters, cutting poultry for frying, cutting joints, etc.

6. An 8 inch *Scalloped or Saw-toothed Bread Knife*



7. *Poultry Shears*



8. *Oyster Opening Knife.* For oysters, of course, but also for prying off bottle and can caps, loosening ice trays, preserve jar caps, etc.

Slicers and Carvers

Personal preference often enters into the choice of a slicer or carver from the many patterns available. Some like a straight-edge medium-width blade, others like a blade to have a sweep. One important thing to remember is that a wider blade does a better job on hot meat, whereas the narrower the blade the easier

VARIOUS SHAPES OF SLICERS

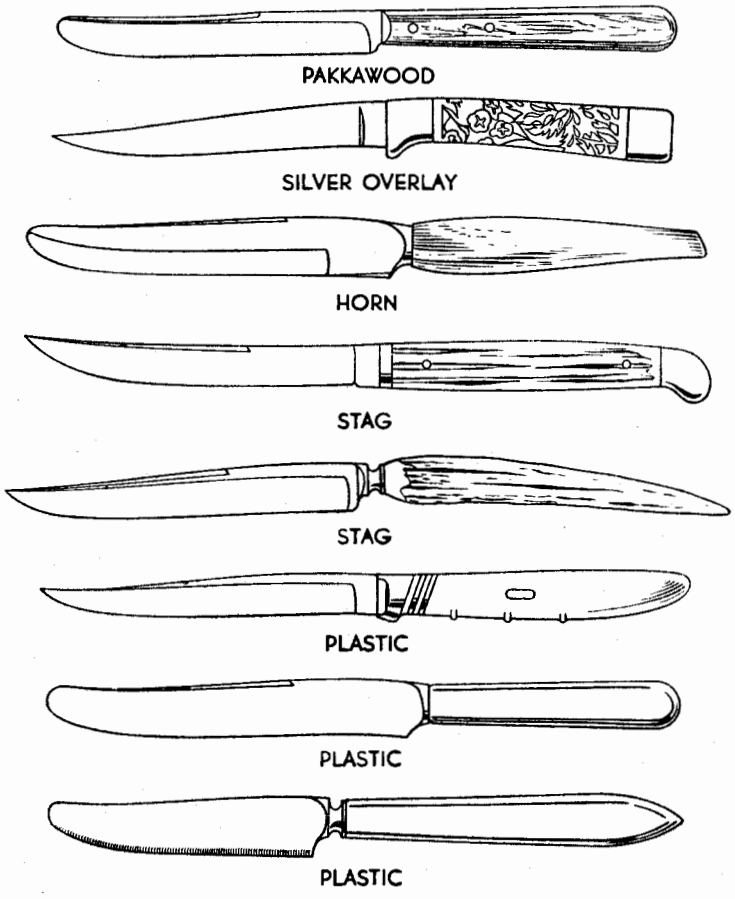
it is to slice cold meat. Hot meat falls away from the blade; when meat is cold and the fats harden it tends to cling to the blade. Therefore the narrower the blade the less resistance.

There are many other cutlery items designed for special purposes which add to the efficiency of the well equipped kitchen, such as the short spatula for spreading butter, the cake and hamburg turners, and pie servers, to name a few.

Always be kind to the cutting edge of any knife by using a cutting board against which to slice any food to be cut through.

Table Knives

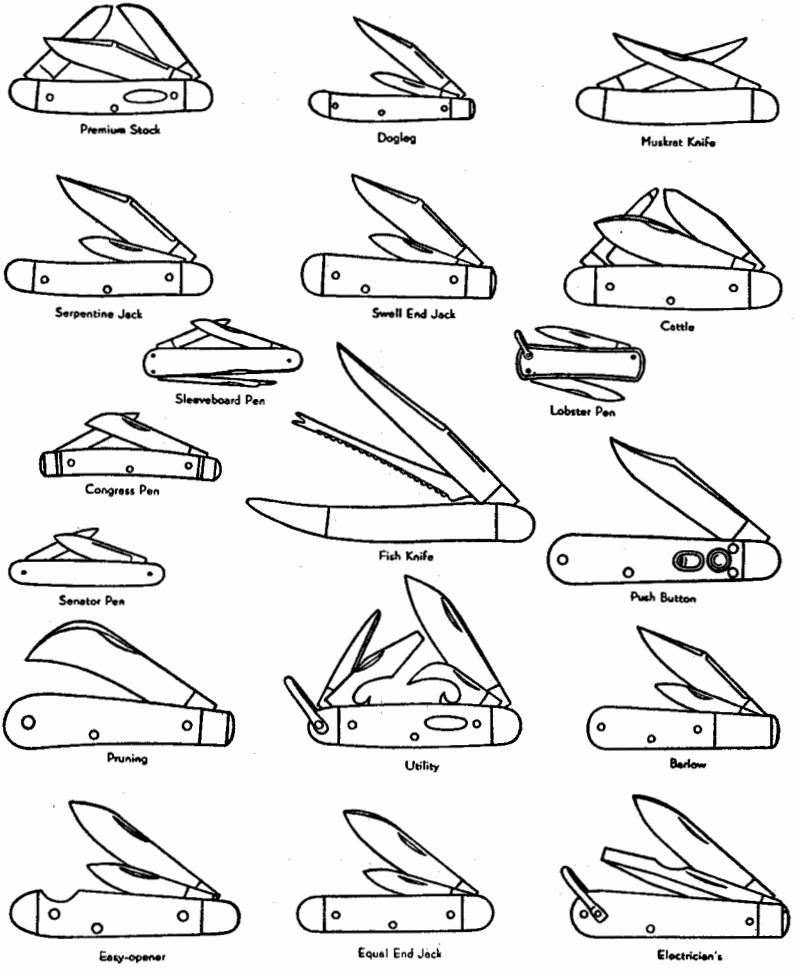
There is no substitute for a sharp knife on the table. Regardless of the flatware used, a sharp knife for cutting meat adds immeasurably to the enjoyment of the meal. For the well appointed table there are available well designed sharp knives with handles made of several attractive materials which, although not as elaborate as those made in the Middle Ages, are appropriate and add dignity in combination with any place setting.



EIGHT ATTRACTIVE TABLE KNIFE DESIGNS

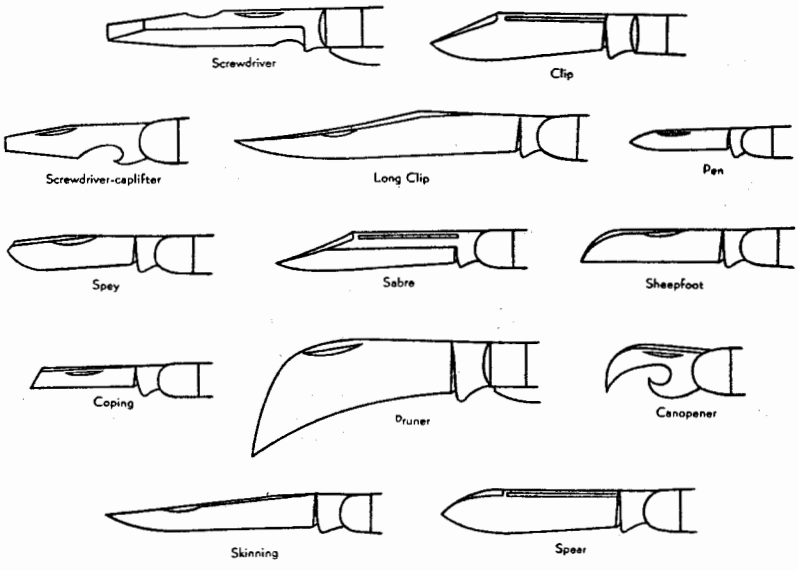
Pocket Knives

In their respective fields pocket knives are as essential as adequate household equipment. While many business men today do not carry a pen knife, those that do would not be without one and find many daily situations where a good knife is most convenient and useful. For mechanics, artisans in many fields, and farmers a rugged pocket knife is indispensable. On the range the



SOME OF THE AVAILABLE PATTERNS OF POCKET KNIVES

pocket knife is a surgical instrument. There is a wealth of patterns to choose from and for the out-of-doors man as well as those whose occupations are less active there are designs for every need.



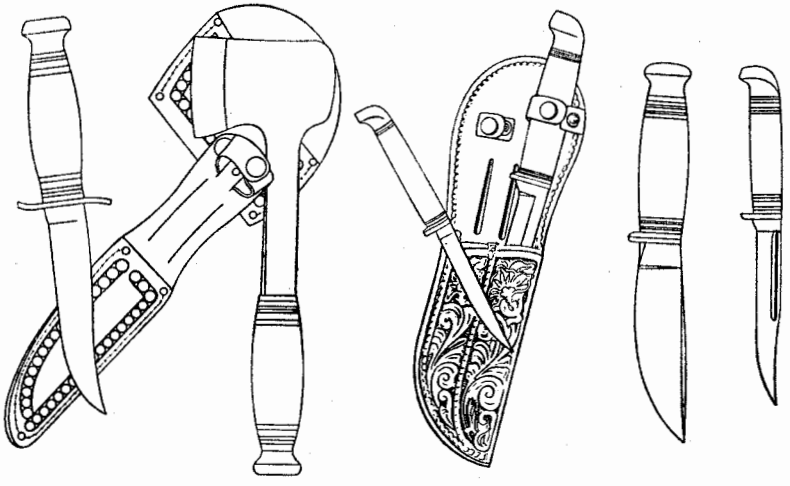
STANDARD POCKET KNIVE BLADES

Sportsmen's Knives

In the early days of this country the knife was a necessary tool and weapon of the pioneer, and the Bowie, or sheath, knife has taken its place in American history. In the Indian wars a common pioneer battle-cry was "Give it to 'em up to Green River!"— which meant "up to the hilt" because one of the popular sheath knives of the time had etched "Green River Works" across the blade where it entered the handle.

The knives of the pioneers were the forerunners not only of the modern military knife, which has become one of the most important pieces of equipment for the American soldier, but also the sportsman's and trapper's knife.

Among the finest products of the American cutlery industry are the many types of sportsman's knives, designed for every purpose of the hunter and fisherman, and unsurpassed in quality.



SOME HUNTING KNIFE COMBINATIONS

Professional and Industrial Knives

It is impossible to list here the thousands of uses of knives in industry, or more than suggest the vital part which American cutlers play in designing and manufacturing knives for the countless special industrial purposes.

The most indispensable tools in the processing of meat are the fine knives used in the stockyards and packing plants, where the workman's daily output and wage are largely determined by the edge-holding quality of his knife; and American-made knives predominate in the meat-packing industry not only in this country but also in many others as well. The canning industry uses many knives, some being of special design. For the farms and vineyards which are the heart of the food industry American manufacturers produce such special knives as are used for beet-topping, and corn,

fruit, and pruning knives. Textile, tire, paper, and rope manufacturers require special knives; and some 20 special patterns of knives are used by the shoe industry. Such knives as putty knives and scrapers, linoleum, and many others are used in ship-building, house building, and in most other industries using materials other than metals.

American cutlery is inseparable from American industry.

Choosing Good Cutlery

As is the case with most commodities, the purchaser gets the quality of cutlery that he is willing to pay for. The grade of steel and the care with which it is brought through the critical processes of manufacture are, in most instances, the determining factors in the sales price. Operations can be skimped and cheaper materials used to reduce the cost, but only to the detriment of the finished product and the resultant dissatisfaction to the purchaser. With reasonable care a good knife will last a lifetime. The difference of a dollar or more in the cost of a knife when spread over its life is nothing compared to the satisfaction the better product gives.

Since it is difficult for the layman to recognize the difference in quality it is safest to purchase cutlery from reputable dealers and buy brands used by reputable cutlery manufacturers. Dollar for dollar there is no finer cutlery to be had than that being produced in our American cutlery factories today where they have the know-how and excel in both materials and styling, put-up and finish.

Good cutlery is an investment in daily satisfaction and deserves care and discrimination in its selection. The purchase of quality cutlery and of essential patterns is an investment that will never be regretted.

Members of Associated Cutlery Industries of America

NAME	LOCATION	BRAND
H. Boker & Company	New York, N. Y.	"Tree Brand"
Chas. D. Briddell, Inc.	Crisfield, Md.	"Briddell"
W. R. Case & Sons Company	Bradford, Pa.	"Case XX"
Cattaraugus Cutlery Company	Little Valley, N. Y.	"Cattaraugus"
John Chatillon & Sons Co.	New York, N. Y.	"Foster"
The Clement Company	Northampton, Mass.	"Delvin"
Clyde Cutlery Company	Clyde, Ohio	"Clyde"
Colonial Knife Company	Providence, R. I.	"Colonial"
Ekco Products Company	Chicago, Ill.	"Flint" "Geneva Forge"
The Goodell Company	Antrim, N. H.	"Goodell"
Hyde Manufacturing Co.	Southbridge, Mass.	"Hyde"
Imperial Knife Company	Providence, R. I.	"Hammer Brand" "Jackmaster Brand"
Kinfolks, Inc.	Little Valley, N. Y.	"Kinfolks"
Lamson & Goodnow Mfg. Co.	Shelburne Falls, Mass.	"Lamson"
National Silver Company	New York, N. Y.	"Royal Brand"
Northampton Cutlery Co.	Northampton, Mass.	"Northampton"
Ontario Knife Company	Franklinville, N. Y.	"Tru-Edge"
Queen Cutlery Company	Titusville, Pa.	"Q"
Quikut, Inc.	Fremont, Ohio	"Quikut"
Russell-Harrington Cutlery Co.	Southbridge, Mass.	"Dexter" "Russell"
Schrade-Walden Cutlery Co.	Walden, N. Y.	"Schrade" "Everlastingly Sharp"
Ulster Knife Company	New York, N. Y.	"Ulster"
Union Cutlery Company	Olean, N. Y.	"Ka-Bar"
Utica Cutlery Company	Utica, N. Y.	"Kutmaster"
The Voos Company	New Haven, Conn.	"Voos" "Empire"
Western States Cutlery Co.	Boulder, Col.	"Western Cutlery"

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