Peanut Butter as an American Icon
Peanut butter was initially considered a health and vegetarian food, but it quickly became a major mainstream staple, a mass-produced commodity sold in almost every grocery store in America. It was employed on virtually every type of food from soups, salads, sauces, and main courses to desserts and snacks of every description. Few other products in American culinary history have achieved such influence in so many ways in such a short period of time, and peanut butter has remained a staple food in America ever since.

Peanut butter has been employed in a number of other commercial products—cakes, confections, cereals, and many snack foods—the most successful being in the manufacture of chocolate bars. In 1928 H. B. Reese Candy Company produced a chocolate-covered peanut butter cup, which subsequently became known as “Reese’s Peanut Butter Cup.” Two years later, Frank and Ethel Mars introduced the “Snickers Bar,” a combination of peanut butter nougat, peanuts, and caramel encased in milk chocolate. Snickers quickly became America’s most popular candy bar, a position it has held ever since. Chocolate and peanut butter are combined in some of America’s best-selling chocolate bars, including Snickers and Reese’s Peanut Butter Cup.

Peanut butter cookbooks have been regularly published since William Kaufman’s “I Love Peanut Butter” Cookbook was published in 1975. The Adult Peanut Butter Lovers’ Fan Club currently counts over sixty thousand members. Today, Americans consume annually about 857 million pounds of peanut butter, or 3.36 pounds per person. It can be found in 83 percent of American households. Peanut butter is also consumed in Saudi Arabia, Canada, Japan, Korea, and Western Europe.

See also Kellogg, John Harvey; Legumes; Nuts; Oil; Snacks.

BIBLIOGRAPHY


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PEANUTS. See Legumes; Nuts; Oil; Peanut Butter.

PEAS. Peas are among the oldest cultivated vegetables and once served as a dietary cornerstone for the early agrarian societies of Europe and the Middle East. The English word for pea derives from Latin pisum, a term that now serves as the name of the genus to which peas belong. Pea is thus used in English in two senses: as a descriptor for other pea-like vegetables, such as cowpeas, chickpeas, pigeon peas, and winged peas; and as the specific name for Pisum sativum, the peas employed by humans as food or for such agricultural uses as fodder and green manures.

Genetic Origins
All true peas belong to the same species, but are divided out into three distinct groups or subspecies. This means that even though peas are self-fertile, they readily hybridize in nature and as a result, there are numerous crosses that often blur the differences between the subspecies. This discussion will focus exclusively on the three subspecies and their historical uses as a source of food.

The genetic origin of peas is thought to be southwest Asia, somewhere in the vicinity of Afghanistan. The ancestral pea is now extinct, although its immediate descendants, the wild pea (Pisum sativum, spp. elatius and spp. humile) survive in the Middle East. This is a vining plant with tiny flowers (often crimson or rose) that rambles over rocks or climbs on low bushes for support. Like modern peas, it has tendrils that allow it to use the limbs of nearby plants so that the pods are raised up and out of reach of rodents and other small animals. Stone Age sites in Greece and coastal Turkey dating from about 5700 B.C. have yielded carbonized remains of the elatius subspecies, whereas sites from the same period more inland in present Israel and especially the Tigris Valley, have produced remains of the subspecies humile. The general conclusion is that wild peas were recognized for their food value at an early date and were gathered both as a fresh vegetable in June (when the seeds are green and sweet) and as a dry seed for use during the rest of the year.

Wild peas later appear in the remains of Swiss lake dwellings (about 3000 B.C.E.), so it is evident that they were carried out of their native habitat into Europe and maintained either as a cultivated plant or as a managed plant in the wild. Since the pea formed a dietary triumvirate with lentils and such ancient grains as emmer,
einkorn, and barley, it is likely that peas traveled as a useful weed along with the migration of early grains. Archaeological evidence suggests that wild peas were commonly found in areas planted with grain and that the entire plants were harvested, hung up and dried, then threshed as needed. Wild peas were mashed and cooked alone or with grains to make porridges, or they were ground into flour and mixed with other flours to make flat breads. Pea flour was also used as a medicine, especially in the treatment of wounds.

Cultivated Peas

The next step in the evolution of the pea was the appearance of the field pea, which is written botanically as Pisum sativum, spp. arvense. This is a form of pea that evolved artificially through human intervention and supplied early agricultural societies from China to Ireland with one of the most important staple foods down to the eighteenth century. Pease potage was a common dish in the Middle Ages, and in India, vatana (dal made from peas) is still an important element of everyday diet. In the southern portion of the United States, people commonly refer to cowpeas as field peas, but the practical point is clear: this is not a plant grown in kitchen gardens; it is an American substitute for the true field peas of Europe. Field peas, like wild peas, were harvested on the vine and dried in the barn. The peas were threshed as needed and the straw given as fodder to the livestock.

There are many heirloom varieties of field peas surviving today, although they are grown mostly as fodder or as a green manure (plowed under to enrich the soil). In the Middle Ages they were food for man and beast, and it is this type of pea that was introduced into China from India during the T’ang Dynasty. Pea soup even appears in early Buddhist texts as a healthful, albeit simple dish consistent with a monastic lifestyle.

Regardless of where they are cultivated, all field peas share certain common features that separate them from the so-called garden peas which later became more important. The vines are generally shorter and stronger than those of wild peas, the plants are more compact, and through natural mutation and careful selection over time, they normally yield a higher number of pods often with large seeds. However, to the casual viewer, the most distinctive feature is the flower, which is multicolored. Some of the most beautiful flowers in this species appear on field peas. Furthermore, the dry seeds are normally speckled. The tiny, speckled Jämtlands Grä Förder Ärt of Sweden, and the tan-seeded Groch Pomorski (Pomeranian Pea) of medieval Poland are two surviving examples of this type.

Field peas are often referred to in horticultural literature as gray peas, a term that seems to have evolved in the low countries owing to the color of the seed and the flour they yield. During the late Middle Ages, Capuchin monks in Holland and northern Germany devoted considerable energy to the improvement of field peas for agricultural purposes. This has resulted in a group of large-seeded gray peas referred to as Capuchin, especially those from the Netherlands where the breeding of new pea varieties became a national pastime by the early 1600s. One of the classic peas from this group and one which dates from the 1500s is the handsome blue pod Capucijner, a soup pea growing on six-foot (two m) vines.

Garden Peas

Dwarfism is a recessive gene in peas, and every so often short plants will appear in the field. This dwarfism was noted by Dutch growers in the seventeenth century and manipulated through careful selection to produce a variety of so-called bush types. Holland Capucijners with two-foot vines, and the delicious raisin Capucijners (which actually do look like dried raisins) represent a further evolution of this old category of pea. While they are technically field peas, these bush varieties were also adapted to kitchen gardens and therefore moved up a notch in culinary status. This brings us to the true gar-
The garden pea is written botanically as *Pisum sativum*, *spp. sativum* and is readily recognized by its white flowers. The white flower suggests albinism, especially since the flowers of wild peas are not naturally white. Genetic mutation is further supported by the fact that the seeds are generally very light in color, from near-white to yellow, and when dry are either smooth or wrinkled. Horticulturists now group garden peas by these seed textures since the two types yield peas with different culinary characteristics. Both types, however, contain more sugar than field peas when green, and it was this unusual sweetness that probably first caused the attention of observant gardeners in the Mediterranean some two thousand years ago.

The common white flowering garden pea was known to the ancient Greeks and Romans, but its precise place of origin and date of appearance is unknown. It appears to have been treated as an aristocratic vegetable, hence its mention by Apicius and other classical authors. It was raised in the gardens of the great Roman estates for the luxury of the nobility, but it was not food for the masses: field peas were their sustenance. Garden peas continued to be grown during the Middle Ages, again as food for the aristocracy and church princes. It is not until the horticultural revolution of the 1600s that we find this pea moving into middle-class gardens. The Dutch took the lead in developing new varieties like the tender mange-touts (snap or sugar peas) and the dwarf *petit pois*, but it was the French court of Louis XIV that made green peas fashionable. During the reign of William and Mary, Dutch horticultural enthusiasm caught on in England, and England has remained the center of pea development ever since.

The English have developed elaborate horticultural categories for classifying peas, but doubtless their marrowfats stand out as a singular contribution to this class of vegetable. Marrowfats are peas that are sweet and buttery when cooked green, although they are rarely sold that way in England. Their dry seeds are somewhat chalky in appearance and reduce to a creamy texture when used in soups. Most commonly they are canned, and as a canned product, they became a standard feature of English cookery by the late Victorian period. The very best varieties were developed by Thomas Andrew Knight (1759–1838), a genteel horticulturist who was responsible for a wide range of improved fruits and vegetables. Many of Knight’s peas were used by later breeders like Thomas Laxton and Alan MacLean to create some of the Victorian varieties that are still popular today, among them Laxton’s Fillbasket (1872) and MacLean’s Paradise Marrow (also known as Champion of Paris) introduced in the 1850s.

On the other side of the English Channel, the Paris seed house of Vilmorin introduced some of the most popular pea varieties in nineteenth-century Europe, especially several French varieties that are now much sought after by Paris chefs. These would include Glore de Quimper, a dwarf bush pea of the *petit pois* type similar to American Wonder, the scimitar-podded Serpette d’Auvergne from the 1830s, and the Pois Géant sans Parchemin (Giant Sugar Pea), which has bicolor flowers, a tell-tale sign of its field pea ancestry.

Through trade contacts with the Dutch and Portuguese, the Chinese and Japanese were introduced to mangetouts (sugar peas) in the seventeenth century. Since then, they have developed numerous new varieties of tender-podded peas popularly referred to in present-day seed catalogs as snow peas or Chinese peas. The sprouts and young pods are commonly employed in stir-fries and should not be confused with commercial American snap peas. Snap peas are large sweet peas with a crisp, edible pod. This name is somewhat misleading since many peas, like the Sickle Pea of the eighteenth century, can be eaten whole like a snap pea when picked very young. Snap peas are really nothing more than an improvement of the old melting marrows or melting sugar peas, as they were called in the 1800s.

Many of the more recently developed varieties, like the Slim Pea, or the odd Parsley Pea with its bushy tendrils, have evolved to reflect very specific shifts in contemporary diet. In the case of the Slim Pea, it makes an ideal freezing pea for small gardens owning to its diminutive vines, not to mention that the name implies weight loss and low calories (peas are very high in calories). Peas were among the first vegetables marketed as frozen food in the 1920s, and today there is increasing commercial interest in varieties that can be frozen and then cooked in the microwave oven. The Parsley Pea represents a much different mentality, since it is a pea that appeals to organic gardeners and followers of macrobiotic or vegetarian diets. Its peas and pods are edible and its tendrils may be cooked and transformed into faux seaweed salad for a meal with the ascetic appointments of Taoist simplicity.

**PEAS THE FRENCH WAY**

Shell your Peas, and pass a quarter of a Pound of Butter, gold Colour, with a Spoonful of Flour; then put in a Quart of Peas, four Onions cut small, and two Cabbage cut as small as the Onions; then put in half a Pint of Gravy, season with Pepper, Salt, and Cloves. Stove this well an Hour, then put in half a Spoonful of fine Sugar, and fry some Artichokes to lay round the Side of the Dish; serve it with a forced Lettuce in the Middle.

**SOURCE:** Adam’s Luxury, and Eve’s Cookery (London, 1744).
PEPPER. For pepper (spice), see Herbs and Spices; for peppers, see Chili Peppers.

PESTICIDES. A pesticide is any agent used to kill or control a pest. Pests include insects, weeds, and diseases, such as fungi. In addition, mice, rats, birds, and algae may become pests at some time. When pests damage plants or property, people often use pesticides to control them. The term “pesticide” can apply to insecticides, herbicides, fungicides, antimicrobials, growth regulators, defoliants, and desiccants, most of which are applied to food or food plants before or after harvest. Common pesticides are encountered every day—in pet flea collars, kitchen disinfectants, cockroach baits, swimming pool chemicals, and mosquito repellents. Pesticide products contain both active and inert ingredients, and both must be specified on the label.

Pesticide Controversy
Modern farmers use pesticides to help them to grow almost all of the world’s food. In general, pesticides have been a quick, effective, and inexpensive method of control for pests that attack most of the world’s food crops. Pesticides are credited with helping to save millions of lives by controlling diseases, such as malaria and yellow fever, which are spread by insects. However, most pesticides present some risk of harm to humans, animals, or the environment because they are designed to kill living organisms.

Sulfur, herbal extracts, tobacco, soaps, oil, arsenic, pyrethrum, and lime have been used as pesticides for many centuries, but the widespread use of synthetic pesticides is a relatively recent phenomenon. Dichlorodiphenyltrichloroethane, or DDT, is probably the best known early pesticide. DDT was created in 1873, but it was not until the late 1930s that Swiss researcher Paul Müller discovered that the compound was effective in killing insects. Müller won the Nobel Prize in Physiology and Medicine in 1948 for his work. DDT was an inexpensive and effective solution to many insect problems, and it virtually eliminated malaria from parts of the world. After World War II, DDT became a common agricultural pesticide. In the 1950s, the United States was producing 220 million pounds of DDT per year.

Insect resistance to the substance developed quickly. DDT residues were found in human milk and fatty tissues, and in wildlife food chains. In 1962 writer and ecologist Rachel Carson wrote Silent Spring to warn the public about the long-term effects of misusing pesticides. Carson challenged the practices of agricultural scientists and the government, and called for a change in the way humankind viewed the natural world. Carson testified before Congress in 1963, calling for new policies to protect human health and the environment. While no longer used in the United States, DDT use continues in other parts of the world. Many tropical countries still use DDT to control malaria.

All pesticides (natural and synthetic) have the potential to cause harm during their manufacture or refinement, at the time of application to crops, as residues that persist on food, and in the disruption of the natural balance that exists between pests and their natural enemies. For example, traces of the natural insecticide “rotenone” may be found on vegetables after cooking. Atrazine, a weed-killer commonly used on corn and soybeans, suburban lawns, and utility rights-of-way, has contaminated groundwater where those crops are grown. Insecticides like DDE and dieldrin, which are related to DDT, were banned in the United States in the 1970s, but still show up in the U.S. food supply. Persistent residues of these chemicals travel long distances in global air and water currents. These insecticides are still produced and used in many countries. Recent studies have linked pesticides with acute poisonings, cancer, brain damage, reproductive harm, and many childhood illnesses and learning problems, leading concerned citizens to feel that pesticides should be banned.

Organic Agriculture
Some agricultural experts predict that the quality and quantity of our food supply would be lessened if pesticides were eliminated. However, practitioners of organic agriculture (organic farmers use no synthetic agricultural chemicals and instead rely on management practices such as crop rotation, disease-resistant varieties, and natural enemies to control crop pests) claim that food quality and yield are equally productive under organic management. Fortunately for conventional and organic farmers, the number of safer, reduced-risk options for pest control is increasing. For example, there were approximately seven hundred new, biological pesticide products registered by 1999. Biological pesticides are certain types of pesticides...