

ANDREA PIERONI

**Introduction**

Gathering food from the wild represents one of the most complex aspects of the use of wild plants, and was closely intertwined with the history of the first human communities. Although past hunter-gatherers are often thought of primarily as dependent on the hunting of wild animals, archaeological and ethnographic evidence shows that plant foods always formed the bulk of their diet. The only exception is in areas such as the Arctic, where it is too cold for most wild food plants to grow. Even in agricultural communities today, the gathering of wild plants frequently remains important for nutrition and food diversity.

In recent years it has become obvious that food and medicine are closely linked; a food plant may be used for medicine, and vice versa. Moreover, eating food from the wild is not simply an essential response in times of famine or food shortages, or an easy way to obtain primary nutrients, but more often a complex evolutionary process, involving different aspects of the relationship between humans and their natural environment. Non-cultivated gathered food plants are often weedy and grow in environments disturbed and managed by man. In addition, eating these plants provides many micronutrients and phytochemicals that are now known to play a central role as antioxidants in the prevention of various illnesses, especially age-related diseases.

The use of such plants reflects local tastes and customs, and is often a strong force for identity and social cohesion, particularly among women. In many cultures women organize the gathering of wild plants and the management of home-gardens.

It is impossible to list and discuss here the huge number of wild and weedy plants traditionally collected and consumed. This chapter covers some of the important species throughout the world, with a special emphasis on edible greens. These are mostly collected in the spring, when the leaves, stems, and buds of wild plants are softer and less bitter. There is little archaeological evidence relating to edible greens compared to nuts and seeds, which are more likely to survive. However, evidence from the diet of primates suggests that consumption of young leaves has always been a feature of the diet of modern humans and our hominid ancestors. Nuts, berries, and grains, also gathered from the wild both before and after domestication, are discussed in separate chapters.

*See: Nuts, Seeds, and Pulses, pp. 133–52; Fruits, pp. 77–96; Grains, pp. 45–60*



Pomo woman using seed beater to gather seeds into a burden basket, California, ca.1924. Library of Congress, Prints & Photographs Division, Edward S. Curtis Collection.

#### Africa

##### *Aba Ceropégia* spp.

##### Asclepiadaceae

Various species of *Ceropégia* provide an important food source for many populations in southwest Africa. The tuber is gathered and eaten raw throughout the year. It has its highest water content during the rainy season, becoming drier and sweeter in taste during the dry season. The leaves are also eaten raw.

##### *African locust Parkia biglobosa*

##### Fabaceae

African locust is a large tree native to Sudan, where local populations have used its seeds for many centuries. The seeds are roasted, bruised, fermented in water, and then pounded into powder and made into cakes. A beverage is also made from the pulp of the fresh pod. The leaves have many medicinal uses.

##### *African spider flower, Bastard mustard Cleome gynandra*

##### Brassicaceae

The leaves of this herbaceous species are often gathered and eaten as vegetables in the savanna regions of southern Africa, and are commonly dried and stored. The bitterness of the leaves is tempered by cooking in milk or butter. The leaves have also been used in the treatment of rheumatism, and the juice is claimed to be a treatment for earache.

See: *Herbs and Vegetables*, p. 128

##### *Baobab Adansonia digitata*

##### Bombacaceae

The baobab is one of the most versatile trees of tropical Africa, and its preeminent role in tribal mythology protects it from being cut. The trunk can reach 19 feet (6 m) in diameter, and some trees are over 1000 years old. The hollow trunks of living trees are often used as water tanks. The young leaves of the baobab are commonly gathered and eaten as vegetables in many African regions. The fruit, with its aromatic and sour flavor, is also edible and frequently used in western Africa, either

raw or in beverages; the pulp is often mixed with water to prepare a juice that can be sweetened with sugar, if available. Seeds of the baobab have been ground and made into meal in times of famine in Angola.

#### Beggar's ticks, Spanish needle *Bidens pilosa*

##### Asteraceae

Native to temperate and tropical America, *Bidens pilosa* has spread to the Pacific, Asia, and Africa. The prickly seed vessel has hooks and clings to clothing. The leaves have a strong, resinous flavor and are eaten raw in salads, or steamed and added to soups and stews. They can also be dried for later use. It is one of the most important wild greens (*michia*) in eastern Africa. In Australia and Hawaii the young shoot tips are used to make a tea. A juice made from the leaves is traditionally used all over the world to dress wounds and ulcers.

#### Bitter leaves *Vernonia amygdalina* and *V. cinerea*

##### Asteraceae

In central Africa the leaves are often used as a vegetable, although they must be washed prior to eating to get rid of their very bitter taste. They are claimed to stimulate the digestive system and to reduce fever. The leaves are also used as a topical medicine against bilharzia-transmitting leeches, and are also used instead of hops to make beer in Nigeria. Chimpanzees chew on the pith from young shoots if they have been attacked by parasites.

Meat dishes prepared with the bitter leaves are popular in many African restaurants worldwide and the dried herb is often available in major cities where there is a local African community.

**Cape myrtle *Myrsinæa africana***  
Myrsinaceae

Aerial parts of this evergreen shrub are collected and used as additives in meat and milk-based soups by the Batemi and Masai of east Africa. Saponin-like compounds contained in Cape myrtle, which forms a significant part of the Masai diet, are believed to inhibit absorption of dietary cholesterol, thus helping the indigenous people, who consume large amounts of meat, to remain healthy. The flowers of this species are also eaten, whereas the fruit is said to be used as a treatment for intestinal worms.

#### Gallant soldier, Guasac *Galinsoga parviflora*

##### Asteraceae

Native to South America, this annual weed has been introduced and naturalized to North America, Europe, Africa, and Asia. In eastern Africa, especially Tanzania, where the species is most common, the leaves, stem, and flowering shoots are collected and eaten. The plant is often dried and ground into a powder for use as a flavoring in soups and stews.

See: *Herbs and Vegetables*, p. 104

#### Ice plant *Mesembryanthemum crystallinum*

##### Aizoaceae

Originating in the Cape of Good Hope area, this succulent plant was introduced to Europe in 1727; by 1881 it was already being promoted (ultimately unsuccessfully) in the United States as a beneficial vegetable, to be boiled like spinach. The aerial parts have an acid flavor, being thick and very succulent with a slightly salty tang. The leaves and stems are still gathered from the wild in southern Africa, to be pickled like cucumbers or used as a garnish.

See: *Herbs and Vegetables*, p. 120

**Jew's mallow, Jute *Corchorus olitorius***

**Tiliaceae**  
Best known as a fiber plant, jute is also an important leafy green. Pliny recorded that the aerial parts of this species were frequently gathered and eaten by the ancient Egyptians. Possibly originating in tropical Asia, and grown by the Jews in the Near East (hence the name), the plant grows in many tropical areas. Gathered from the wild in eastern Africa and India, the species has been domesticated in Mauritius, Jamaica, and even in France, where its tender leaves are used in cooking.

See: *Natural Fibers and Dyes*, pp. 295–296; *Herbs and Vegetables*, p. 122

**Umdoni tree *Szygium cordatum*****Myrtaceae**

Native throughout Africa, this tree produces pinkish-purple fruits, about twice the size of a peanut, which have a tart flavor and apple-like texture with a large pit. These fruits are often gathered from the wild in many parts of Africa, especially Zambia and Swaziland, where they are called *umncizi* and are the most commonly gathered wild fruit by adults and children alike. Fruits of the brush cherry (*S. paniculatum*) are gathered from the wild and eaten—raw or cooked—in Australia (see later).

**Vangueria *Vangueria* spp.****Rubiaceae**

Various species of *Vangueria* (*V. infusa* or wild medlar in Namibia, *V. madagascariensis* or Spanish tamarind in Madagascar, *V. cyanescens* in Swaziland) are gathered from the wild by indigenous people in Africa. The raw, soft-flesh fruit is eaten and tastes similar to a wild apple. When the fruits start drying out, from April onwards, they are soaked in water then boiled and mashed slightly and eaten as a kind of porridge. The fresh fruits cannot be stored for more than a week, but they can be dried in the sun and then stored for almost a year.

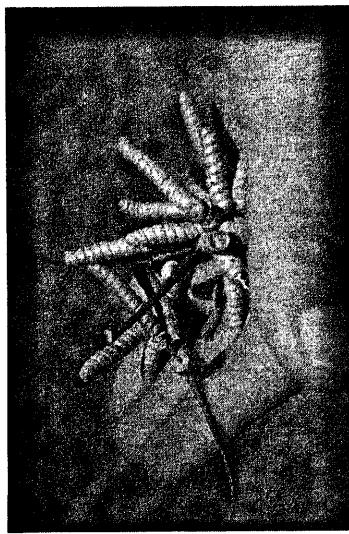
**Americas****Agave *Agave americana* and related species****Agavaceae**

These species play an extremely important role in the culinary traditions of Mexicans and Americans of the Southwest deserts. Just before the flower stalks appear, the plant is dug up and all the leaves are chopped at their base, leaving a cylindrical white and pulpy trunk, which is cooked in a fire pit for several days. The flesh is then eaten from around the fibers that grow in it. The same cooked crown is often sold as a candy in Mexican markets, or a sweet juice can be obtained from the cooked crown, which is used for making a syrup. Today the cooked crown is mashed, mixed with water, left to ferment, and then distilled, to produce *mezcal*. The flower stalks and buds of *Agave* were also thought of as a vegetable delicacy, and the seeds were at one time ground into powder. *Pulque* is a milky fermented drink produced mainly from *A. atrivirens*. Other *Agave* species have also been used as food in Central America.

See: *Natural Fibers and Dyes*, pp. 301–302; *Caffeine, Alcohol, and Sweeteners*, p. 181

**Algaroba, Mesquite *Prosopis* spp.****Fabaceae**

Indians of Peru, Chile, and California eat the sweet pulp contained in the pods of *Prosopis juliflora* (honey mesquite). The pods are sometimes dried and ground to make bread; in the past the pods were chewed to quench thirst during journeys. *P. dulcis* fruits are gathered from the wild in tropical

**Screwbean mesquite (*Prosopis pubescens*)**

M. Kat Anderson @ USDA-NRCS PLANTS Database

South America, *P. pubescens* (screwbean mesquite) pods and seeds were used as fodder and food by Mexican Indians, and the sweetish substance which surrounds the seeds of *P. spicigera* is considered a food in Iran and northwestern Pakistan.

**Amaranth, Inca wheat *Amaranthus* spp.****Amaranthaceae**

Cultivated from time immemorial for food purposes, *A. caudatus* seeds were a staple food in the diet of the Aztecs, who also consumed the aerial parts as greens. In North America, leaves of a number of species were consumed, and today the leaves of some of these species, naturalized in many other tropical and subtropical regions, are still an important wild food in eastern Africa. *A. retroflexus* is important in parts of southern Italy and North Africa.

See: *Grains*, p. 58; *Herbs and Vegetables*, p. 113

**Cow tree *Mimulus* spp.****Sapotaceae**

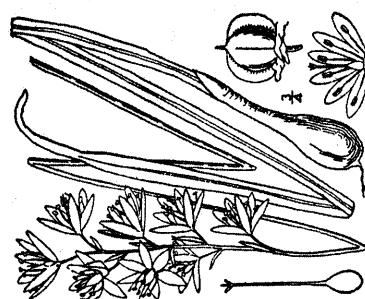
Native to the Brazilian Amazon, the fruits of this species are similar to small apples and full of creamy milk (hence the common name) with an unusual taste. In the state of Para the fruit is very popular and sold in the streets. Natives of Amazonia also collect and drink the milk that exudes from the bark, but this coagulates very quickly, forming a “glue.” Fruits of other species are gathered from the wild and eaten in southeastern Asia.

**Izote *Yucca guatemalensis*****Agavaceae**

The flowers of this species are widely gathered in Central America. After removing the bitter anthers and ovaries, the flowers are dipped in egg batter and fried or lightly boiled. The boiled flowers are eaten with lemon juice in Guatemala. The tender stem tips stripped of their leaves (*cogollo de izote*) are very popular in El Salvador. Flower stalks and buds of many other *Yucca* species are gathered and consumed; a few are eaten in southern Europe, where the species grows in many arid soils.

**Pacaya palm *Chamaedorea tepejilote*****Areceaceae**

The young flowers of this species are gathered from the wild and sold in many markets in Central America. They are used raw in salads, or boiled, or fried in egg batter to form a fritter called *recao de pacaya* in Central America. Usually cooked in several changes of water first to remove their



*Camassia scilloides*. USDA-NRCS PLANTS Database/Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*, Vol. 1, p. 509.

Quamash, Camas, Wild hyacinth *Camassia quamash* and related species  
Hyacinthaceae

Bulbs of this species and of *C. leichtlinii* have been an important food for Native Americans, who moved to quamash fields in the early autumn. The bulbs were placed in a fire pit and left to cook slowly for two days. The raw bulbs have a sweetish, mild, starchy flavor, but a gummy texture; when cooked, however, they develop a delicious sweet taste reminiscent of sweet chestnuts, and they are a highly nutritious food. Quamash is also dried and made into a powder, which is used as a thickener in stews or mixed with cereal flours when making bread.

#### Yampa *Poteridium* spp.

Apiaceae

The thick rootstock of many species, such as *P. oreogana* (squaw potato), has been gathered and cooked in a fire pit, eaten raw, or dried and ground into flour by many North American indigenous peoples, especially California Indians. The Nez Percé Indians collected and boiled the tuberous roots, which have a cream-like flavor. The roots are also said to have various medicinal properties.

#### A'kub *Gundelia tournefortii*

Asteraceae

The perennial thistle A'kub is gathered in early spring from the wild by several indigenous groups in Palestine, Israel, and the surrounding arid areas. Its immature inflorescence heads are cooked in the same way as artichokes, covered with mincemeat, fried briefly in olive oil, than simmered in a lemon juice-based sauce. In the recent past mature fruits have also been used as a source of oil. Charred fruits at Neolithic sites in Iraq and Turkey are evidence that oil extraction dates back at least 10,000 years.

#### Bistort, Snakeweed *Polygonum bistorta* and related species

##### Polygonaceae

Leaves of snakeweed were consumed by northern populations in Europe and Asia; in the north of England, for example, young shoots of *P. bistorta* were used as an ingredient of a savory herb pudding. In northern Russia the roots have been gathered for many centuries, and eaten roasted, and the roots of Alpine bistorta (*P. viviparum*) are still used by Samoyed peoples. *P. japonicum* (*amatokoro*) and *P. multiflorum* are frequently used in Japanese and Chinese cooking; occasionally use of these plants has spread to Europe, where they are gathered and collected for sweets in the European nouvelle cuisine.

Leaves of *P. cognatum* are frequently collected in Anatolia. Often *mercimelek* (as the species is known in Turkey) is sun-dried in the spring and stored for winter. Bottles of the preserved herb are widely available in Turkish communities within Germany.

#### Bracken fern *Pteridium aquilinum*

##### Dennstaedtiaceae

In the past in many parts of the world, the rhizome was ground and added to flour to bake bread. In the Canary Isles (La Palma and La Gomera) up to the 1930s the rhizomes were ground and mixed with barley meal to prepare a kind of porridge called *gofio*. It is the young shoots of the plant that are important in Japanese and Korean cooking; the shoots are soaked for a day in water and ashes (an archaic detoxification method), then steamed or boiled and eaten as a vegetable or in soups. Sometimes the shoots are preserved in salt, in lees of *sake* or in *miso*. Bracken fern shoots have also been used in Siberia to produce a kind of beer, and by native peoples in North America. Leaves are commonly used by shepherds in the Mediterranean to filter sheep's milk and to store freshly made ricotta cheese.

#### Caltrop, Devil's thorn *Tribulus terrestris*

##### Zygophyllaceae

The leaves and young shoots of caltrop are gathered and cooked in eastern Asia. The leafy stems have been used to thicken buttermilk—it is said that buttermilk sellers often diluted their merchandise with water and then thickened the mixture with this plant. The seeds are said to have various medicinal properties, and have been used for the removal of intestinal worms, to reduce flatulence, and as an aphrodisiac, astringent, and diuretic.

#### Gogd Allium *ramosum*

##### Alliaceae

Similar to cultivated Chinese chives (*A. tuberosum*), this species is a staple ingredient of the traditional diet of northern Chinese and nomadic Mongol peoples. Large quantities—up to 9 to 11 pounds (4 to 5 kg) fresh weight—of the aerial parts of *gogd* (the Mongolian name for this species) are gathered from May until July by each nomadic family then preserved with salt, ready to be used during the winter months. In this way *gogd* leaves are added to pots of boiled mutton, or used to make dumplings, which are eaten raw, steamed, or boiled. Sometimes the plant blossoms (*soriz*) are collected in late July and August and preserved in salt. *Gogd* is also used as a tonic for stomach ailments.

#### Hackberry, Nettle tree *Celtis* spp.

##### Ulmaceae

Fruits of several species of *Celtis* have been eaten by man for many centuries. A thin, sweet flesh surrounds the large stone. Stones of *C. tournefortii* have been found in large quantities in many Neolithic archaeological excavations in the Near East and probably formed a significant part of the prehistoric diet. They are still gathered from the wild and consumed as a snack in central Anatolia.

*Celtis australis* is found in the south of Europe, whereas *Celtis occidentalis* is native to the United States. Native Americans used *Celtis occidentalis* either as a fresh fruit, to flavor meat, or by pounding the berries and mixing them with fat and parched corn.

See: *Origins and Spread of Agriculture* p. 20

#### Oleaster, Russian olive *Elaeagnus angustifolia*

Elaeagnaceae

Fruits of oleaster are gathered and sold in the Near East (particularly in the local markets of Istanbul) and Iran, where a dessert made from the bittersweet flesh of the fruit is known as *zinneyd*. In Nepal, the fruits are also consumed fresh or dried.

See: *Ornamentals*, p. 280

#### Salep Orchis spp.

Orchidaceae

For many eastern Asiatic populations and especially in Turkey, the dried roots of *Orchis* species and other genera are the source of *salep* (*sahlab*). This yellowish powder has been an important food in Istanbul as a hot beverage (*salep* powder is added to milk) and for *salep* ice cream; these both had great social and cultural significance. Today the gathering, commercialization, and export of many threatened *Orchis* species is forbidden, and true *salep* powder is often substituted by manioc flour or other artificial carbohydrate sources. Nevertheless, its use is still common.

#### Shepherd's purse *Capsella bursa-pastoris*

Brassicaceae

This species—one of the most common weeds worldwide—is of European origin. It accompanied Europeans during their explorations and is today ubiquitous in Europe, Asia, and America. It has frequently been used as a wild food (cooked), especially in China, Japan, and Korea, where the young leaves are gathered in the spring and sold in local markets. Whole plants (*naeng-i*) are used in Korea as cooked vegetables (*namul*) and the species has occasionally been introduced as a food crop. In Korean markets in California it is common to find the plant sold frozen.

Australia and Oceania

#### Corkwood *Hakea eyreana* and *H. suberea*

Proteaceae

Flowers of these trees growing in arid areas of Australia contain considerable amounts of sweet nectar that can be sipped with a straw or mixed with water to produce a beverage. Aborigines also ate the seeds of the fork-leaved corkwood.

#### Desert cyananchum *Cynanchum floribundum*

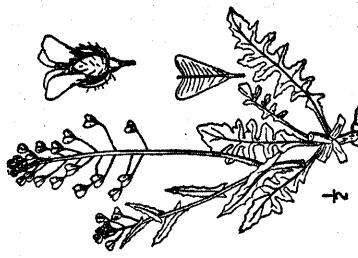
Asclepiadaceae

Unripe pods of this shrub, growing in desert zones in Australia, are eaten raw by Aborigines. Older pods and leaves are steamed and eaten.

#### Kurrajong *Brachychiton* spp.

Sterculiaceae

Aborigines eat the seeds of several of these species raw or after having roasted them to remove the yellow hair surrounding the seeds, which is an irritant. In addition, the young tuberous roots of some species have been a popular food item with indigenous peoples of Australia.



Shepherd's purse (*Capsella bursa-pastoris*). USDA-NRCS PLANTS Database/Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 2, p. 138.

#### Lilly pilly *Syzygium australe* & spp.

Myrtaceae

Fruits of *Syzygium australe*, *S. luehmannii*, *S. oleosum*, and *S. paniculatum* are traditionally eaten fresh in Australia, or used in modern times for jellies, syrups, tarts, and puddings. *Syzygium paniculatum* (brush cherry) fruits would have been the first plant eaten by Captain Cook at Botany Bay. *S. luehmannii* (riberry) has a distinctive clove-like flavor and is eaten as an accompaniment for emu, kangaroo, and wallaby meat.

#### Macrozamia *Macrozamia* spp.

Zamiaceae

Several species of *Macrozamia*, all endemic in Australia, are an important food source for Australian Aborigines, once the plant has been processed to remove toxins. The crushed seeds can be soaked in water, where they break down and the poison is dissolved. Alternatively the seeds can be dried out and then leached in running water for 3 to 5 days. Aging the seeds is also sufficient to remove the toxicity so the seeds can then be eaten raw or cooked. More recently *M. spiralis* has been used for the production of alcohol and adhesive pastes and the manufacture of laundry starch.

#### Nicobar Islands breadfruit *Pandanus tectorius*

Pandanaceae

The fruits of this species, native to Southeast Asia and Polynesia, are gathered by the indigenous people, baked in hot sand or ashes, and the pulp is eaten. Occasionally the pulp is eaten raw, or is beaten from the fruits and soaked for a few days to make a mild alcoholic drink.

#### Noni, Indian mulberry *Morinda citrifolia*

Rubiaceae

Noni, the fruit of *M. citrifolia*, is traditionally eaten in its native area of Indonesia and Polynesia and today also worldwide. Noni fruits were exported by Polynesians at first to Tahiti, then to Hawaii, and from there noni juice reached the continental United States, where it is now a popular ingredient of many health food supplements. A large number of medicinal properties (to treat arthritis, diabetes, high blood pressure, muscle aches and pains, menstrual difficulties, mild and severe headaches, heart disease, AIDS, cancers, gastric ulcers, sprains, mental depression, senility, poor digestion,

arteriosclerosis, blood vessel problems, drug addiction, and more) have been claimed, but the medicinal properties of the plant have still to be researched.

#### Water lily *Nymphaea* spp.

##### Nymphaeaceae

In Australia a few species of *Nymphaea* (especially *N. gigantea* and *N. violacea*) are gathered from the wild by Aboriginal women. They collect the tubers, which are eaten roasted (they need to be leached in water several times before being eaten), and also the buds and flower stalks, which are commonly eaten raw. The unripe pods are used in traditional foods: they are first roasted, then the tiny seeds are extracted and eaten, or ground into flour.

See: *Psychoactive Plants*, p. 203; *The Hunter-Gatherers*, p. 9

#### Yam *Dioscorea* spp.

##### Dioscoreaceae

The large, fleshy, tuberous roots of several species of *Dioscorea* are cultivated today in many tropical countries. The majority of the species originated in Oceania and southeast Asia, and many of them still grow wild and are gathered by local peoples with digging sticks. The air potato or bitter yam *D. bulbifera* is the focal point of a well-known ceremony—known as *kulama*—of the Tiwi of Australia. The roots of this species (as of many other yam species) are poisonous and have to be prepared carefully to remove the poisons. In the *kulama* ceremony, while the yams soak in fresh water, the earth oven is prepared by pushing sand and grass outward from the center of the ceremonial ground and digging a large hole. Dry sticks about 3 feet (1 m) long are pushed upright into the ground around the oven and a fire is built up of sticks, grasses, and crumbled termite mounds; when the fire has burnt down to a bed of coals the yams are placed in the coals and covered with paper bark and sand. On the third day the yams are eaten. During this feast many new songs and dances are performed; it was traditionally one of the duties of new initiates to create new dances and songs.

See: *The Hunter-Gatherers*, p. 9; *Roots and Tubers*, p. 66; *Origins and Spread of Agriculture*, pp. 19, 20, 22, and 23

#### Europe

#### Borage *Borago officinalis*

##### Boraginaceae

In the culinary traditions of some Mediterranean areas, aerial parts of borage are the main ingredient of boiled mixtures of greens, generally used in soups (as in the *Prelunggion* or wild greens of Genoa, in northwest Italy), or sometimes fried in olive oil and garlic (*erbuccci*). The cultural use of borage in consumption of wild greens seems to mirror the spread of olive tree cultivation along many coastal areas, as has been modeled in areas bordering northwestern Tuscany and Liguria (central northern Italy). In central Europe, borage is often cultivated in gardens and the young leaves are used in mixed salads to add their distinctive cucumber taste. It is also quite common for the blue flowers to be used as a decoration for salads and desserts.

See: *Herbs and Vegetables*, pp. 99–100

#### Cow parsnip, Hogweed, Eltrot *Heracleum sphondylium* (synonym *Heracleum lanatum*)

##### Astaceae

The aerial parts of wild cow parsnip have been used for a long time in central and eastern Europe and were the original ingredients of the famous Russian and Polish sour soup *borsch* (or *barszcz*). This soup was originally made by heating up the liquid that resulted from the natural lactic fermentation of the aerial parts of *H. sphondylium* (similar to the German tradition of fermenting a few

varieties of cultivated *Brassica oleracea* and producing sauerkraut). In eastern Europe the name of this soup and of the plant, *H. sphondylium*, are in fact the same—*barszcz*. In the past, particularly during times of famine, the succulent stems of cow parsnip have been gathered from the wild, eaten as green vegetables, or even transformed into a low-alcohol fermented drink, *raka*. The young stems were also used as a vegetable by western North American natives and occasionally gathered and eaten in the outer Hebrides. Today consumption seems to be restricted to a few areas in Siberia.

#### Lesser calamint *Calamintha nepeta*

##### Lamiaceae

Lesser calamint grows south of the Alps and is sometimes referred to as having “magic” aromatic properties. Lesser calamint is the most important aromatic wild herb in central Italian cooking, and is used for cooking wild mushrooms (especially *Boletus edulis*) and cultivated zucchini. In Basilicata (southern Italy) lesser calamint is added to rennet during the making of a goat’s cheese called *caciocavallo*, characterized by its unique wild mint taste derived from the essential oils of *Calamintha nepeta*.

#### Perennial wall rocket, Wild arugula *Diplotaxis tenuifolia*

##### Brassicaceae

This variety of arugula (rocket) is gathered and eaten raw in southeastern Italy (Apulia) and France (Languedoc). In Apulia it is often sold in local markets during the spring, and is the most common wild vegetable in southern Italy, used in salads or added to homemade pasta (*orecchiette*). Occasionally, the aerial parts of *D. erucoides* are collected from the wild and consumed in the Mediterranean area.

See: *Herbs and Vegetables*, p. 113

#### Spanish oyster *Scolymus hispanicus*

##### Asteraceae

Open-air markets selling *S. hispanicus* still survive today in some Mediterranean areas. This wild herb, which has a mild artichoke flavor, has been used for many centuries in cooking throughout the Mediterranean region. The young leaves are removed by hand and only the tender leaf stalks are cooked. In a few southern Italian communities it is traditionally gathered only during Holy Week, and cooked in a pie with lamb meat, cheese, ricotta, and eggs, to be eaten on Easter Day.

#### Tassel hyacinth *Muscari comosum*

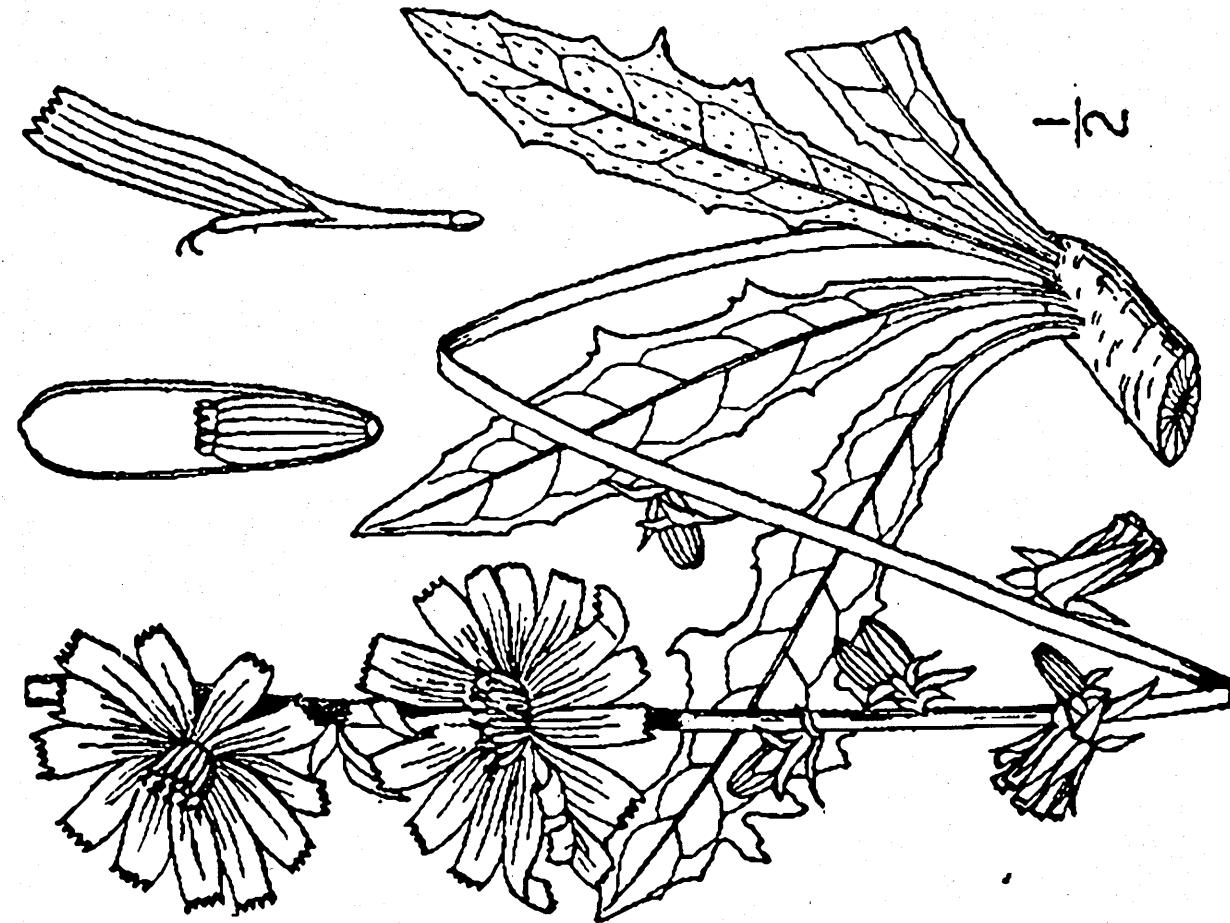
##### Hyacinthaceae

Gathering wild bulbs of tassel hyacinth is still a common practice in Apulia and Basilicata in Italy. In southern Italy the bulbs are traditionally eaten fried in olive oil having been soaked in cold water overnight to remove their bitterness, or pickled in olive oil. The eating of these bulbs spread to northern Italy with the labor emigration during the 1960s. Nowadays it is possible to buy the bulbs (mainly from North Africa) in small open-air markets of Florence, Milan, and parts of Germany and Switzerland if there is a sizeable community of southern Italians. Pliny refers to them being eaten with vinegar, oil, and *garum* (the characteristic sauce of the ancient Romans, made from fermented fish).

#### Wild asparagus *Asparagus acutifolius* and related species

##### Asparagaceae

Collecting wild asparagus (mainly *Asparagus acutifolius*, but also *A. albus*, *A. aphyllus*, *A. stipularis*, and *A. verticillatus*) during spring is a very common pastime for the rural population in central Spain, southern France, and central and southern Italy. Young shoots of wild asparagus are often



sold in local markets and—being relatively expensive—provide an additional source of income for rural populations. Young shoots of other *Asparagus* species are also collected from the wild and consumed in Asia (*A. acerosus*) and in southern Africa (*A. larinicus*).

See: *Herbs and Vegetables*, p. 113

#### Wild chicory, Blue sailor *Cichorium intybus*

##### Asteraceae

Wild chicory has been used from time immemorial as a vegetable in the Mediterranean. However it was not until the 17th century that chicory was first described as cultivated. Cultivated varieties of chicory are now well-known as vegetables. The roots have often been dried and ground for use as a coffee substitute. Young whorls of wild chicory are still gathered today and eaten cooked, in many regions of north Africa, southern Europe, and the Near East. The bitter taste of wild chicory is often claimed in folk cultures to be “healthy” and a “cleansing agent” for the blood, especially if the plant is consumed during the spring. Sometimes the water in which chicory has been boiled is drunk and is believed to be a medicine.

See: *Herbs and Vegetables*, p. 117

#### Wild fennel *Foeniculum vulgare* subsp. *piperitum*

##### Apiaceae

Although today the cultivated edible form of fennel characterized by its broad white, sweet leaf stalks and bulb is widely grown, collecting wild fennel to eat is an important activity in many Mediterranean areas. Young shoots of wild fennel are the main ingredient of the well-known Sicilian dish *pasta con le sardine* (noodles with fresh sardines), and fennel seeds are collected during the fall and used to flavor homemade sausages.

See: *Herbs and Vegetables*, p. 103; *Plants as Medicines*, p. 214

#### References and Further Reading

##### General

- Couplan, F. 1998. *The Encyclopedia of Edible Plants of North America*. New Canaan, CT: Keats Publishing.
- Ekin, N.L. (Ed.). 1994. *Eating on the Wild Side: The Pharmacologic, Ecologic, and Social Implications of Using Non-Cultigens*. Tucson: University of Arizona Press.
- Ekin, N.L. 1996. Medicinal cuisines: diet and ethnopharmacology. *International Journal of Pharmacognosy* 34: 313–326.
- Facciola, S. 1998. *Cornucopia II—A Source Book of Edible Plants*. Vista, CA: Kampong Publications.
- Gibbons, E. 1987. *Stalking the Wild Asparagus*. Chamberburg, PA: Alan C. Hood.
- Howard, P.L. (Ed.). 2003. *Women & Plants: Gender Relations in Biodiversity Management & Conservation*. London and New York: Zed Books.
- Johns, T. 1990. *With Bitter Herbs They Shall Eat It: Chemical Ecology and the Origins of Human Diet and Medicine*. Tucson: University of Arizona Press.
- Johns, T. 1999. Plant constituents and the nutrition and health of indigenous peoples. In *Ethnoecology—Situated Knowledge, Located Lives*, edited by V.D. Nazarea. Tucson: University of Arizona Press.
- Phillips, R. 1983. *Wild Food*. London: Macmillan.
- Scoones, I., Mehnyk, M., and Pretty, J.N. 1992. *The Hidden Harvest: Wild Foods and Agricultural Systems, A Literature Review and Annotated Bibliography*. London: International Institute for Environment and Development.
- Surtevant, E.L. 1972. *Starvation's Edible Plants of the World*, edited by U.P. Hedrick. New York: Dover.
- Tanaka, T. 1976. *Tanaka's Cyclopaedia of Edible Plants of the World*. Tokyo: Yugeki-sha.

##### Africa

- Asfaw, Z., and Tadesse, M. 2001. Prospects for sustainable use and development of wild food plants in Ethiopia. *Economic Botany* 55: 47–62.
- Ekin, N.L., and Ross, P.J. 1994. Pharmacological implications of “wild” plants in Hausa diet. In *Eating on the Wild Side*, edited by N.L. Ekin. Tucson: University of Arizona Press.

Wild chicory (*Cichorium intybus*). USDA-NRCS PLANTS Database/Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 3, p. 305.

Fleuret, A. 1979. The role of wild foliage plants in the diet: a case study from Lushoto, Tanzania. *Ecology of Food and Nutrition* 8, 87–93.

Fox, F.W., and Young, M.E.N. 1982. *Food from the Veld: Edible Wild Plants of Southern Africa Botanically Identified and Described*. Johannesburg: Delta Books.

Grievett, L.E., and Ogle, B.M. 2000. Value of traditional foods in meeting macro- and micronutrients needs: the wild plant connection. *Nutrition Research Review* 13, 31–46.

Humphrey, C.M., et al. 1993. Food diversity and drought survival. The Hausa example. *International Journal of Food Science and Nutrition* 44, 1–16.

Johns, T., and Kokwaro, J.O. 1991. Food plants of the Siaya District, Kenya. *Economic Botany* 45, 103–113.

Johns, T., Mhoro, E.B., and Sanaya, P. 1996. Food plants and masticants of the Batemi in Ngorongoro District, Tanzania. *Economic Botany* 50, 115–121.

Marshall, F. 2001. Agriculture and use of wild and weedy greens by the *Piki ap Oom* Okiek of Kenya. *Economic Botany* 55, 32–46.

Maundu, P.M., Ngugi, G.W., and Kabuye, C.H.S. 1999. *Traditional Food Plants of Kenya*. Nairobi: Kenya Resource Centre for Indigenous Knowledge, National Museums of Kenya.

Ogle, B.M., and Grievett, L.E. 1985. Legacy of the chameleon: edible wild plants in the Kingdom of Swaziland, southern Africa. A cultural ecological, nutritional study. Part I—Introduction, objectives, methods, Swazi culture, landscape and diet. Part II—Demographics, species, availability and dietary use, analysis by ecological zone. Part III—Cultural and ecological analysis. *Ecology of Food and Nutrition* 16, 193–208; 17, 1–30; 17, 31–40.

Ogoye-Ndegwa, C., and Aagaard-Hansen, J. 2003. Traditional gathering of wild vegetables among the Luo of Western Kenya—A nutritional anthropology project. *Ecology of Food and Nutrition* 42, 69–89.

Shackleton, S.E., et al. 1998. Use and trading of wild edible herbs in the Central Lowveld savanna region, South Africa. *Economic Botany* 52 (3), 251–259.

Vainio-Mattila, K. 2000. Wild vegetables used by the Sambas in the Usambara Mountains, NE Tanzania. *Annales Botanici van Maydell* H.-J. 1990. *Trees and Shrubs of the Sahel: Their Characteristics and Uses*. Wiesbaden: Josef Margraf.

van Wyk, B.-E., and Gericke, N. 1999. *People's Plants: A Guide to Useful Plants of Southern Africa*. Arcadia: Briza.

von Maydell, H.-J. 1990. *Trees and Shrubs of the Sahel: Their Characteristics and Uses*. Wiesbaden: Josef Margraf.

Bye, R.A. 1981. Quilities—ethnogeography of edible greens—past, present, and future. *Journal of Ethnobiology* 1, 109–123.

Cheatham, S., and Johnston, M.C. 1995. *The Useful Wild Plants of Texas, the Southeastern and Southwestern United States, the Southern Plains and Northern Mexico*. Austin, TX: Keats Publishing.

Couplan, F. 1998. *The Encyclopedia of Edible Plants of North America*. New Canaan, CT: Keats Publishing.

Dunnire, W.W., and Tierney, G.D. 1997. *Wild Plants and Native Peoples of the Four Corners*. Santa Fe, NM: Museum of New Mexico.

Elias, T.S., and Dykeman, P.A. 1990. *Edible Wild Plants: A North American Field Guide*. New York: Sterling Publications.

Hodgson, W.C. 2001. *Food Plants of the Sonoran Desert*. Tucson: University of Arizona Press.

Kuhnlein, H.V., and Turner, N.J. 1991. *Traditional Plant Foods of Canadian Indigenous Peoples: Nutrition, Botany and Use*. Philadelphia: Gordon and Breach Science Publishers.

Ladio, A.H. 2001. The maintenance of wild edible plant gathering in a Mapuche community of Patagonia. *Economic Botany* 55, 243–254.

Moerman, D.E. 1998. *Native American Ethnobotany*. Portland, OR: Timber Press.

Turner, N. 1997. *Food Plants of Interior First Peoples*. Vancouver: University of British Columbia Press.

Vierra-Odilon, L., and Vibrans, H. 2001. Weeds as crops: the value of maize field weeds in the Valley of Toluca, Mexico. *Economic Botany* 55, 436–443.

## Asia

Aitchison, J.E.T. 1890. Notes on the products of western Afghanistan and of north-eastern Persia. *Transactions of the Botanical Society of Edinburgh* 18, 1–228.

Ertug, F. 2000. An ethnobotanical study in Central Anatolia (Turkey). *Economic Botany* 54, 155–182.

Johnson, N., and Grievett, L.E. 2002. Environmental change in Northern Thailand: impact on wild edible plant availability. *Ecology of Food and Nutrition* 41, 373–399.

Johnson, N., and Grievett, L.E. 2002. Gathering practices of Karen women: questionable contribution to beta-carotene intake. *International Journal of Food Sciences and Nutrition* 53, 489–502.

Khasbagan, Huai, H.-Y., and Pei, S.-J. 2000. Wild plants in the diet of Ahorchin Mongol herdsmen in inner Mongolia. *Economic Botany* 54, 528–536.

Leimer-Prie, L. 1997. Wild plant food in agricultural environments: a study of occurrence, management, and gathering rights in Northeast Thailand. *Human Organization* 56, 209–221.

Lev-Yafit, S., and Abbo, S. 1999. Traditional use of Alkub (*Gundelia tournefortii*, Asteraceae), in Israel and the Palestinian Authority area. *Economic Botany* 53, 217–223.

Moreno-Black, G., et al. 1996. Non-domesticated food resources in the marketplace and marketing system of Northeastern Thailand. *Journal of Ethnobiology* 16, 99–117.

## Australia and Oceania

Bindon, P. 1997. *Useful Bush Plants*. Perth: Western Australian Museum.

Brooker, S.G., Cambie, R.C., and Cooper, R.C. 1988. *Economic Native Plants of New Zealand*. Christchurch: Botany Division, D.S.I.R.

Cherikoff, V. 1997. *The Bush Food Handbook: How to Gather, Grow, Process and Cook Australian Wild Foods*. Boronia Park, New South Wales: Bush Tucker Supply Australia.

Dixon, A.R., McMillen, H., and Ekin, N.L. 1999. Ferment this: the transformation of noni, a traditional Polynesian medicine (*Morinda citrifolia*, Rubiaceae). *Economic Botany* 53, 51–68.

Isaacs, J. 1997. *Bush Food: Aboriginal Food and Herbal Medicine*. The Rocks, New South Wales: Lansdowne.

Parham, B.E.V. 1972. *Plants of Samoa: A Guide to their Local and Scientific Names with Authorities; with Notes on their Uses, Domestic, Traditional and Economic*. Wellington: Department of Scientific and Industrial Research.

Walter, A. 1999. *Fruits d'Océanie*. Paris: Institut de recherche pour le développement.

## Europe

Bonet, M.A., and Valles, J. 2002. Use of non-crop food vascular plants in Montseny biosphere reserve (Catalonia, Iberian Peninsula). *International Journal of Food Sciences and Nutrition* 53, 225–248.

Casoria, P., Menale, B., and Nuñez, R. 1999. *Musari comosum*, Liliaceae, in the food habits of south Italy. *Economic Botany* 53, 113–117.

Couplan, F. 1989. *Le Régal Végétal. Plantes Sauvages Comestibles—Encyclopédie des Plantes Comestibles de l'Europe*.—Volume 1. Piers, France: Editions Equilibrium.

Forbes, M.H.C. 1976. Gathering in the Argolid: a subsistence subsystem in a Greek agricultural community. *Annals New York Academy of Sciences* 268, 151–164.

Guarera, P.M. 2003. Food medicine and minor nourishment in the folk traditions of Central Italy. *Fritterapia* 74, 515–544.

Koschitschew, A.K. 1990. *Wildwachsende Pflanzen in unserer Ernährung*. Leipzig: VEB Fachbuchverlag.

Maurizio, A. 1927. *Die Geschichte unserer Pflanzennahrung*. Berlin: Verlagsbuchhandlung Paul Parey.

Pieroni, A. 1999. Gathered wild food plants in the upper valley of the Serchis river (Garfagnana), central Italy. *Economic Botany* 53, 327–341.

Pieroni, A., et al. 2002. Ethnopharmacology of ikra, traditional weedy vegetables of the Arbereshë of the Vulture area in southern Italy. *Journal of Ethnopharmacology* 81, 165–185.

Riviera Nuñez, D., and C. Obón de Castro. 1991. *La Guía de incafo de las plantas tóxicas y venenosas de la Península Ibérica y Baleares*. Madrid: INCAFO.

# THE CULTURAL HISTORY OF PLANTANTS

SIR GHILLEAN PRANCE  
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MARK NESBITT  
SCIENTIFIC EDITOR

Routledge  
New York • London

Published in 2005 by  
Routledge  
270 Madison Avenue  
New York, NY 10016  
[www.routledge-ny.com](http://www.routledge-ny.com)

Published in Great Britain by  
Routledge  
2 Park Square  
Milton Park, Abingdon  
Oxon OX14 4RN UK.

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Routledge is an imprint of the Taylor & Francis Group

Printed in the United States of America on acid-free paper

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10 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Cultural history of plants / edited by Ghillean Prance.  
P. cm.  
ISBN 0-415-922746-3 (Hardcover : alk. paper)  
1. Crops—History. I. Prance, Ghillean T., 1937-  
SB71.C86 2004  
630'.9—dc21  
2002012820