

Coffee

Leonid Enari

AN OLD ETHIOPIAN legend tells that coffee was discovered by a goatherder and his goats. The herder noticed that whenever the goats nibbled berries and leaves from a certain shrub on the hillside in the evening they pranced happily and noisily around all night giving him no chance for a well-deserved sleep. When he tried some of the berries himself, he became so excited over the resulting alertness and wakefulness that he took a few of the berries to the mullah. The mullah listened to his story, tasted the berries, and decided that they were exactly what he needed to keep the faithful from falling asleep during the long evening services.

In about 800 A.D., coffee was used as food. The whole ripe berries and leaves were crushed and molded into balls held in shape with fat. One of them, about the size of a tennis ball, made up a days ration and sustained a man on a long march. There are a few wandering tribes in Africa who still use them.

The habit of coffee-drinking seems to have started in Arabia in the 15th century. All available evidence suggests that the people of Mocha, Medina, and Bagdad did not know of coffee before this date. Coffee is not mentioned in the Koran, nor is there any allusion to it in the Hebrew Scriptures.

The first beverage made from the berries of the coffee plant is believed to be an alcoholic liquor. The pulp of the berry is succulent and contains a fair amount of sugar. If a decoction made

from it was allowed to stand for a short time, it would become alcoholic and might even be distilled into spirit. The beverage made from coffee berries would not only be intoxicating, but also stimulating because of the caffeine in it.

The art of roasting the seeds (beans) and then preparing a decoction from them was apparently a more recent discovery. There is no record of when the process was discovered.

From Arabia, coffee spread to Egypt, Damascus, Aleppo, Persia and then to Europe where coffee houses sprang up in Italy, France, England, Germany and other countries. These European coffeehouses became centers of literary, artistic and political activity. The most famous were found in London in the 17th and 18th centuries. Because of the open and liberal nature of the discussions taking place in these coffeehouses, it was not long before they came under the scrutiny of state and church. In England, in 1675, Charles II tried to suppress coffeehouses on the ground that they were centers of political agitation. The American colonies copied the mother country by establishing coffeehouses in Boston, New York and Philadelphia. The Green Dragon in Boston was one of the most famous. It was a political and social center from 1697 to 1832. Daniel Webster called the Green Dragon "The Headquarters of Revolution." The American coffeehouses, however, never attained the intellectual importance of their European counterpart.

There are about 40 or 50 species of

coffee plants (*Coffea*) in the tropics of the Old World, mainly in Africa. Of these, the Arabian coffee tree (*Coffea arabica*) produces more than 90 percent of the world's coffee. The others of

are narrowly ovate in shape, pointed, entire, smooth, shiny and opposite. Its flowers are pure white in color, fragrant, delicate, and are produced in axillary clusters. Each flower has a 5-toothed



Leaves and berries of COFFEA ARABICA.

commercial value are the Liberian coffee tree (*C. liberica*), the Sierra Leone coffee tree (*C. stenophylla*), and the Congo coffee tree (*C. robusta*).

The Arabian coffee tree is a shrub which under natural conditions grows to a height of 20 feet but in cultivation is kept between 10 and 12 feet. Its leaves

calyx, 5-toothed corolla, 5 stamens and 1 pistil. Its fruits, known botanically as drupes, are berrylike or cherrylike, assuming a dark-red color when they ripen. Each fruit contains two seeds, less commonly one, which are the coffee beans of commerce. The Arabian coffee tree is indigenous to Ethiopia, the Sudan, Guinea and

Mozambique. It is not found wild in Arabia, as has been claimed by early writers.

The first botanist to examine the seeds of the Arabian coffee tree was Clusius, who figured and described them in 1574. He also reported that they were called buna (the Ethiopian name for coffee) and that in Alexandria a drink was made from them.

Coffee trees demand moist climates and fertile, well-drained soils for best growth. The best and most productive coffees are grown in highland habitats 1,000 to 4,000 feet above sea level where constant moderate temperatures and frequent mists seem to benefit the plants.

Up to the close of the 17th century, the entire world's supply came from the province of Yemen in South Arabia where the famous Mocha coffee still is produced. When coffee was introduced to other countries and its growing became wide spread, the Arabian monopoly was broken. At present, Brazil grows more than half of the world's crop. Its annual production is about five billion pounds. Other leading coffee-growing countries are Colombia, Ivory Coast, Mexico, Angola, Uganda, Guatemala, Indonesia, El Salvador and Ethiopia.

Coffee is a hand-picked crop. After debris has been removed, the berries are prepared for market by either a dry or wet method. In the dry method, the berries are exposed to sun and wind on open

drying grounds and turned frequently. In large plantations, artificial heating methods sometimes take the place of natural sun-drying. The pulp (the succulent outer coat), the parchment (the inner adhesive layer), and the silver skin (the seed-coat within the parchment which adheres

closely to the seed), are all removed mechanically by machines. After this is done, the beans are graded by size. From this point on, the beans are known as green coffee. The green coffee is packed approximately 132 pounds to a bag, transported to the nearest seaport, and shipped to coffee-drinking countries. In the second (wet) process, the ripe berries are run with water through a pulping machine which removes the skin and part of the pulp. The fragments

of the pulp remaining are removed by controlled fermentation in vats over a 12- to 24-hour period. After washing the beans in running water, they are dried and handled much as in the dry method.

After the green coffee reaches the country of destination, it is roasted, ground, and packed for market. Green coffee beans do not have any aroma. The marvelous aroma with which we are familiar is produced when the beans are roasted and is partly due to a volatile oil produced at the expense of other substances, and partly to the sugars being caramelized. The rapid cooling, which in good manufacture follows the roasting of the bean, is intended to prevent undue loss



C. ARABICA used as a house plant.

of the volatile oil. At the same time, there is a loss of water and fats, and the cellulose cell-walls are made brittle and brown. Without roasting, the bean could not be ground. During roasting the beans lose 12 to 19 percent of their weight but gain about 30 percent in volume.

Once roasted and ground, coffee loses its aroma and flavor very rapidly so that after ten days most of it has disappeared. About the tenth day the coffee begins to develop a disagreeable flavor we call staleness that grows progressively worse. The only known method of preserving the aroma is by packing the coffee in vacuum cans. Vacuum-packed coffee is always fresh when opened, containing all the delicious aroma of the freshly roasted and ground coffee. Once opened, however, vacuum-packed coffee begins to lose its aroma at exactly the same rate as freshly roasted coffee does.

Each variety of coffee has its own aroma. Most of the brands on the grocery shelves are blends. The blending of coffees is the mixing of two or more varieties in order to get a characteristic aroma that many people like.

The United States ranks as the largest consumer of coffee. Each year the U.S. uses about two billion eight hundred million pounds, or about one-fourth of all the coffee produced in the world. This means about 15 pounds of coffee per each man, woman and child. Other leading coffee-consuming countries are France, West Germany, Italy and Sweden.

The stimulating value of coffee lies in the caffeine, which is present in the bean, partly free, but chiefly in chemical combination. Small doses of caffeine produce wakefulness, take away the feeling of fatigue, promote clear thinking, quicken the pulse, and raise the blood pressure. Larger doses can cause nervousness, irritability, lethargy, insomnia, headaches, palpitation, rapid heartbeat, nausea, vom-

iting and diarrhea. According to medical researchers, the consumption of more than 6 cups of coffee a day increases the risk of heart attacks to twice that of those who drink no coffee. 250 milligrams of caffeine a day is considered a large dose. An 8-ounce cup of instant coffee contains 105 to 120 mg., and the same volume of prepared coffee 145 to 180 mg. of caffeine. Drinking 3 cups of coffee a day may not seem much if we do not realize that with the coffee we also swallow 315 to 570 mg. of caffeine. Coffee, of course, is not the only source of caffeine we might ingest in our daily lives. There are 95 to 120 mg. of it in an 8-ounce cup of tea, 28 mg. in an 8-ounce bottle of Coca-Cola, and 65 mg. in a tablet of Excedrin.

Coffee trees can be grown indoors as a conversation piece. When a plant becomes too large for the indoor situation it can be planted in a sheltered area outdoors where it will continue to flower and to produce berries. This, of course, is only possible in frost-free or nearly frost-free areas. A heavy crop of berries might even give some people the idea of following the footsteps of early discoverers and trying to produce their own brand of wine or coffee.

The Los Angeles State and County Arboretum has a number of coffee trees in containers and in the ground. The oldest specimens may be seen in quadrants 0/13 and 0/14 (at the very top of Tallac Knoll) where, shaded by taller trees, they have flowered and fruited since the sixties.

The author is much indebted to the approximately 20 cups of coffee that made it possible for him to write this article in two consecutive nights.

Dr. Enari is a senior biologist in the Department's research division, taxonomist, chemist, teacher, and author of a number of textbooks on botany.



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