THE ODYSSEY OF CHOCOLATE ©Dr. John Freedman 2026

7000 years of cultivation, commerce, creativity and indulgence.





The history of chocolate is really several histories combined and intertwined: the domestication and trade of a tropical fruit, the development of sophisticated Mesoamerican cultures, the rise of European colonialism and trade, the industrial revolution, the rise of food chemistry as a science, the energy of capitalism and entrepreneurial rivalries, and the astounding human creativity that has brought us a myriad of wonderful ways to enjoy this gift of nature.

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IN HE BEGINNING: AMAZONIAN ORIGINS TO MESOAMERICAN CACAO CULTURES




~5300 BC: DNA analysis indicates the cacao plant first evolved in the Amazon rainforest of South America. Consistent with this is the oldest archaeologic evidence of cacao residues in cooking pots in the Ecuadorian Amazon rainforest, dated to ~5300 BC. This is more than 2000 years before traders would take the fruit and its seeds north to Mesoamerica where it would attain great cultural importance.

~3000 BC: Cacao begins its move north through Central America to Mexico via trade networks and migration.

~1900 BC: Cacao fruit and seed consumption is common among communities in southern Mexico. Ritualistic use has not yet begun.

~1500 BC: Olmec and early Mayan cultures domesticate the cacao plant and incorporate it into religious rituals. The Olmec call it *kakaw* from which the word cacao likely derives.



400 BC–AD 250: The Maya develop cacao-drinking into a sophisticated cultural institution. It is associated with the gods and drunk by the nobility and the clergy after frothing it by pouring and aerating it. It is a cold, bitter drink, with absolutely no resemblance to sweetened chocolate drinks today much less to solid chocolate which would not be developed for another 1500 years. The Mayan can be said to be the world's first 'chocolate culture' wherein cacao has significance far beyond its food value and becomes part of religion, politics, trade, and elite social life.





The cacao seeds ('beans') were harvested, fermented, dried, winnowed, selected, and ground into a paste which was mixed with water. There is no definitive evidence that the brew was mixed with local chili peppers, vanilla, honey, maize or other local ingredients, though historical accounts suggest it may have been. The drink was certainly not sweetened with sugar cane as sugar cane was not imported to the Americas until the time of Columbus. The bitter drink had great social significance and was consumed at ceremonies, feasts, marriages, funerals, and diplomatic gatherings. It was associated with wealth and prestige and the sacred. Cacao seeds became a form of currency as well as a key commodity in long-distance trade.

900–1500 AD: The Toltecs and Aztecs in central Mexico inherit the Mayan chocolate tradition. The Aztecs coin the term XOCOLATL which means 'bitter water' in their Nauhatl language. The Spanish would transliterate this as CHOCOLATE.

THE EUROPEANS ARRIVE

1502: Columbus and his 13-yr-old son Fernando see a Mayan trader with a canoe full of 'some kind of almonds' (cacao seeds) on the island of Guanaja near Roatan in the Bay Islands of present-day Honduras. They note that the seeds seem to be valued greatly. This is the first European reference to cacao.

1519-21: Hernan Cortez conquers the Aztecs and notes that their Emperor Montezuma II drinks 'up to 50 cups a day' of cacao. Cortez also notes the stimulant properties of the caffeine-rich brew. Cortez would gain control of cacao trading networks and send the seeds in bulk back to Spain.

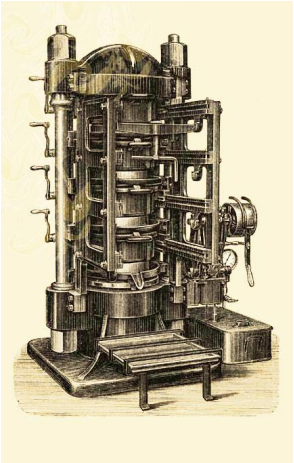
1528: Within less than decade the Spanish transformed the drink, adding sugar and cinnamon to counteract the bitterness. The sweetening of chocolate in Spain is one of the most important inflection points in the history of chocolate.

1600s: Chocolate-drinking becomes a European rage and luxury of the rich, with the Spanish doing their best to keep its origins and cultivation a secret from the French and British and Italians and Dutch and everybody else. Cacao was expensive and exclusive, so the wealthy - and the clergy - had a lock on it and the latter became the first chocoholics. Chocolate drinking houses sprang up all over Europe. It was an era when coffee, tea, and chocolate were competing and chocolate was the winner in the luxury market. The first chocolate drinking house in England was founded in 1657 and the British would take a big liking to it (and eventually become major players in the new 'eating chocolate' industry 2 centuries later).

1700s: The secret is out and the cacao trade expands exponentially with all of the European colonial powers planting the tree in their peri-equatorial colonies where the plants can thrive in the high heat and humidity they require. The Amazonian and then Mesoamerican plant is now widely cultivated throughout Africa, Southeast Asia, and colonial Central and South America. No longer a curiosity of the Spanish court, cacao is now an international commodity. But it is still a drink only, and not a source of confections. In **1753** Swedish botanist Carl Linnaeus names the cacao genus Theobroma, "food of the gods"**,** in recognition of its Mayan cultural routes.

CHOCOLATE FOR THE MASSES

1800s: This is the transformative century for chocolate, thanks to the industrial revolution and endless European ingenuity. An expensive drink for the elite would be transformed into a smooth and creamy solid confection for the masses. In **1819** Swiss entrepreneur François-Louis Cailler established the first mechanized chocolate factory near Vevey which made cacao grinding much more efficient. His work helped establish Switzerland as a center of chocolate manufacturing, which persists to this day. In **1826** fellow Swiss chocolatier Philippe Suchard introduced the mélangeur, a machine which ground sugar and cacao into a semi-solid albeit gritty paste that was the predecessor of solid chocolate. But the truly revolutionary new development was the **1828** invention of the hydraulic COCOA PRESS by Conrad Van Houten in the Netherlands. This solved a key problem: cacao paste was difficult to dissolve in water. Van Houten's press separated the cocoa butter lipids from the cacao solids. The cacao solids could then be readily mixed with water to make a smooth paste. The cocoa butter could then be mixed back in. The result was a smooth, moldable paste that solidified at room temperature - and solid chocolate, then known as 'eating chocolate', was born. Van Houten's solid chocolate 'coins' are still made today. The cocoa press further contributed to the industrialization of cacao products that made it increasingly more affordable to the masses.





In **1847** Englishman Joseph Fry is credited with creating the first chocolate bar. And it was mass-produced in his factory and affordable to ordinary consumers. The elite drink of the Mayan nobility and priest class was now a chocolate bar in the average Joe or Josephine's pocket. Just 2 years later in **1849** John Cadbury would build and expand on Fry's success and mass produce chocolate bars on a scale never before imagined. This solidified England's standing as a center of the chocolate industry which the Swiss and Dutch had pioneered. In **1852** an English-born American food chemist named Samuel German developed a sweet and highly soluble baking chocolate aptly named 'German's chocolate'. A century later that chocolate would be featured in a recipe we all know (see below). In **1875** Swiss chocolatier Daniel Peter teamed up with Swiss milk chemist Henri Nestle to figure out a way to solubilize cacao

powder in milk - and the first milk chocolate was born. The public adored this lighter, smoother, creamier type of chocolate. In the same year Cadbury came out with their famous 'Easter Eggs'. **1879** was big year for chocolate lovers because another Swiss chocolatier (accidentally) developed a way to make chocolate much smoother - when he unintentionally left his mixer on overnight he came back in the morning to an exquisitely smooth paste for his chocolate bars - that melt-in-your-mouth texture that we associate with fine chocolate. The process became known as conching because the shape of the mixing blades was similar to the shell of the large mollusc.






1893 gave us one of the great American chocolate creations: the chocolate brownie. The Palmer House hotel in Chicago claims the honor and the wife of the owner was the creative spark.

INTO THE 20th CENTURY

1900: Milton Hershey introduced his mass-market milk chocolate bar with his company's large-scale production system in Pennsylvania. He is credited with starting a (never-ending) chocolate craze in America.
1905: 'Cadbury Dairy Milk' chocolate bar increased the milk and fat content and was a smashing success. It outsold Hershey's. **1907**: Not to be outdone, Hershey developed Hershey's Kisses. Each tear-drop tidbit was hand-wrapped until 1921 - and it quickly became a runaway success.



In **1908** Swiss chocolatier Theodor Tobler produced the Toblerone milk chocolate bar. The name combines Tobler's surname with *torrone,* the Italian word for honey-and-almond nougat candy.
Its triangular shape made it distinctive and it remains one of the world's most recognizable chocolate bars. In 1915 Cadbury introduced the first mass-produced box of chocolates, the 'Cadbury Milk Tray'. This for the first time made assorted boxed chocolates available to the masses for gift-giving. **1920** saw the Mounds bar combining dark chocolate and coconut. Hershey soon acquired it. **1923** saw the Milky Way bar from the Mars brothers. The idea came from then-popular malt drinks- the bar featured a malt nougat with a caramel and chocolate coating, just as it does today. The Milky Way bar's success catapulted the Mars Company to the top of the candy industry, where it remains. **1925** saw Mr. Goodbar introduced just as Americans were warming up to peanuts and peanut butter. In **1928** a Hershey employee quit to market his own peanut butter-chocolate confection: Harry Reese's Peanut Butter Cups. Hershey eventually bought the company and it is their #1 selling product today.



1928 also saw the Heath Bar introduced, by American brothers Bayard and Everett Heath, combining English toffee with milk chocolate - an instant classic. In **1930** the Frank Mars Company introduced the Snickers bar which combined nougat, caramel and peanuts under a milk chocolate coating. It was named after his favorite horse and became one of the most successful chocolate bars in history. **1932** saw the introduction of the Three Musketeers (originally 3 separate pieces) and the Mars Bar ("a chocolate nut sundae in your hand").

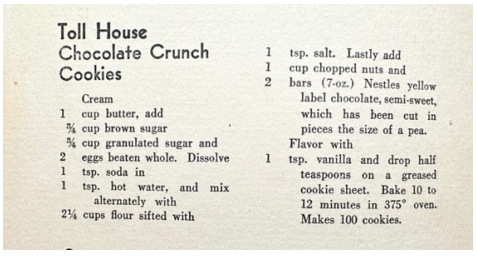






1934 saw Nestle introduce Milo malted chocolate beverage which became especially popular in Australia and remains so. Kit Kat's came onto the scene in **1935,** introduced by British company Rowntree as 'Rowntree's Chocolate Crisp' and renamed Kit Kat in **1937** when Nestle bought it. It was a different eating experience and caught on - today there are over 500 flavors, 400 of them in Japan. **1936** saw the commercial introduction of what some consider the most exquisite form of chocolate and others consider a crime against nature: white chocolate. White chocolate has only cocoa butter (and milk and sugar) - no cocoa solids and thus none of the characteristic flavors and none of the anti-oxidants. Nestle gets the credit (or the blame) for commercializing it. **1938:** Nestle's Crunch with crisped rice and the still-famous Aero bar by Rowntree - both had a new 'mouthfeel' and exemplified the chocolate bar's versatility. Also in **1938** was the first published recipe for chocolate chip cookies: published by Ruth Wakefield, wife of the owner of the Toll House Inn in Whitman, MA. She had created the cookie using chopped pieces of semi-sweet chocolate. She called it the 'Toll House Chocolate Crunch Cookie'. Nestlé picked right up on the craze and began producing chocolate morsels in **1939** and even paid to acquire the Toll House name and recipe. Ruth was given a tidy sum and also a lifelong supply of Nestle's chocolate 'chips'.





Toll House Chocolate Crunch Cookies

Cream
1 cup butter, add
¾ cup brown sugar
¾ cup granulated sugar and
2 eggs beaten whole. Dissolve
1 tsp. soda in
1 tsp. hot water, and mix alternately with
2¼ cups flour sifted with
1 tsp. salt. Lastly add
1 cup chopped nuts and
2 bars (7-oz.) Nestles yellow label chocolate, semi-sweet, which has been cut in pieces the size of a pea.
Flavor with
1 tsp. vanilla and drop half teaspoons on a greased cookie sheet. Bake 10 to 12 minutes in 375° oven. Makes 100 cookies.

In **1941** Forrest **M**ars teamed up with Hershey exec Bruce **M**urrie to make **M&M**s for the military - by 1945 they were a smash hit nationwide.



1957 was the year that Sam German's chocolate was used by a Texas housewife, 'Mrs. George Clay', who published her recipe for 'German's Chocolate Cake' combining a fluffy chocolate cake with a coconut pecan frosting. So it's German's (not German) chocolate cake, and it's thoroughly American, not German). The 1950s saw chocolate become a hallmark ingredient in baking, which persists to this day.

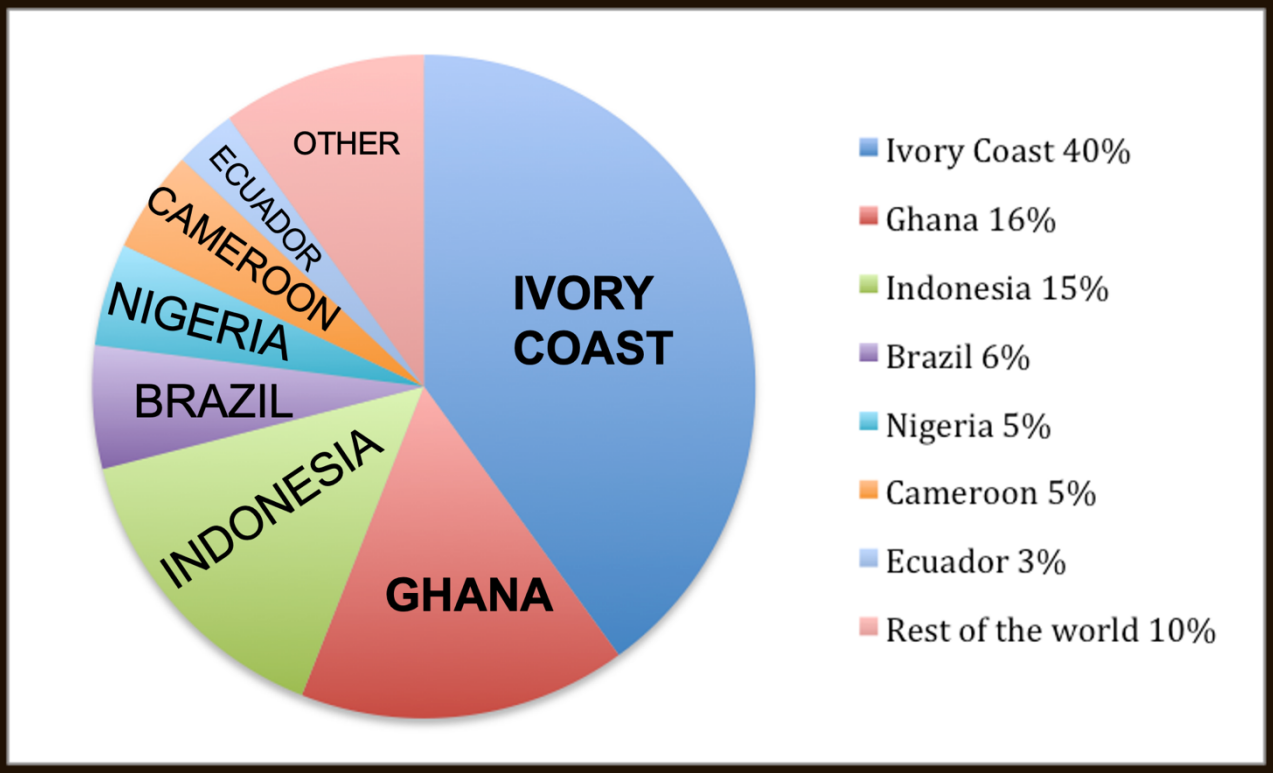
The **2000**s have been characterized by massive expansion in the premium chocolate market, with consumers increasingly interested in higher cacao percentage as well as ethical sourcing (Fair Trade certified in hopes of avoiding child labor in West Africa), organic cultivation, special additives or fillings such as sea salt, chili pepper, fruits, matcha, pistachio and filo dough strands in the trendy Dubai chocolate, and more attention to bean variety (with Criollo, Nacional and Trinitario cultivars generally being considered superior to Forastero). In **2017** the giant Belgian-Swiss chocolate company Barry Callebaut introduced "a new type of chocolate" called ruby chocolate which is made by a proprietary patented secret process using naturally red-tinged cacao beans and employing techniques which preserve and bring out some of the berry-like polyphenolic flavors in the selected red beans. No colorants are added and it is claimed to have a 'sweet and sour' flavor character distinctly differing from dark, milk or white chocolate. Dubai chocolate was developed in **2021** and is taking the word by storm. It creatively draws upon Middle East dessert traditions to incorporate sweetened pistachio cream and the crunchy strands of phyllo pastry used in the classic dessert known as knafeh.





Lastly, the 2000s have also been notable for increasing attention and research related to the health benefits of dark chocolate which appear to be real and related to the relatively high content of flavanol antioxidants such as epicatechin. For more detail on the data related to chocolate/flavanols and health see the Reference List from my *'Xocolatl: Gift of the Maya'* lecture - available at ScholarAtSea.com

Top Cocoa Producers



ANNUAL WORLDWIDE CONSUMPTION = 4 MILLION TONS!

