

Chapter 1

The Origins of Tea, Coffee and Cocoa as Beverages

Timothy J. Bond

Finlay Tea Solutions, Swire House, 59 Buckingham Gate, London SW1E 6AJ, UK

1.1 Introduction

What are the origins of tea, coffee and cocoa? How were they discovered and how did they become such important items in the everyday lives of billions of people? To answer these questions we need to cover a lot of ground from geography and social anthropology to plant biochemistry and human physiology. The so-called Western cultures began to consume these beverages only very late in their history, 'discovering' tea, coffee and cocoa through the forces of international commerce and trade and the expansion of their empires in the seventeenth century. Prior to that, the drinks had been consumed for a millennium, and as we shall see, the real 'discoveries' were that while many plants were toxic, tea, coffee and cocoa could yield products that could be consumed and have a beneficial impact on human physiology, emotional state and culture. Today, for many consumers it is difficult to imagine life without the first cup of coffee or tea of the day or without a chocolate bar.

1.2 The beverages in question

Tea, *Camellia sinensis*, is a small tree native to the Assam area of North India where North Burma and South China meet. This region has had a tumultuous history, linked to the Opium Wars between the United Kingdom and China, and the War of Independence between the United States and the United Kingdom, the growth of urban centres, the expansion of the British Empire, the birth of the British Industrial Revolution and many more events. After water, tea is now the most consumed beverage in the world (UK Tea Council 2010), drunk for both pleasure and health.

Coffee is produced from the seeds of another small tree, originating this time from Africa, spread via the slave trade to the Arabic empires where it gained pre-eminence

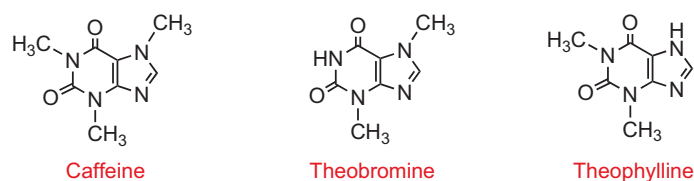


Figure 1.1 Structures of caffeine, theobromine and theophylline.

due to the Muslim ban on fermented alcoholic beverages. *Coffea arabica*, *Coffea robusta* and *Coffea liberica* were discovered later and were transplanted across the world to establish plantations/estates in as far away places as Hawaii, Brazil and Vietnam. From this position, coffee has become, after oil, the second most valuable traded commodity on the global stock market.

Cocoa (*Theobroma cacao*) originates from the rainforests of Central America. As a drink, it was once the preserve of the Mayan and Aztec elite and a form of currency. It became intimately linked to Cortez's pursuit of gold in Southern America, and was much loved by the Spanish court. Cocoa made the move from drink to chocolate to become the favourite snack of the world's children and numerous 'chocoloholic' adults.

These products created change not only in our societies and habits but also in our overall health and drove major changes in transport, especially shipping, contributing to the development of major ports such as Hamburg and Hong Kong, and indirectly creating markets for European pottery and silverware.

Chemically, cocoa, tea and coffee all comprise complex mixtures of plant secondary metabolites (see Chapters 2, 3, 5 and 7). Key amongst these are the purine alkaloids caffeine, theophylline and theobromine (Figure 1.1), which have an impact on alertness and are the basis of the 'pick-up' effects of all three beverages. In addition, simple and complex polyphenols are present, which provide taste and colour characteristics. The exact make-up of these constituents is influenced by the type of raw material, its origin, processing that is driven by manufacturing technology, and whole empires for the growth, trading, blend and distribution of these plant materials as they migrate from bush to cup.

The three beverages were unknown to Western civilisations prior to the seventeenth century. Today, they are items for everyday consumption, having been converted from very different cultural uses. Tea was originally a medicine, coffee was as a religious aid and symbol, and cocoa was the ultimate status symbol consumed by gods, priests and royalty. But where did they come from, who 'discovered' and introduced them to Western cultures and how did they assume their current paramount importance?

1.3 Discoveries – myth and legend

The discovery and initial utilisation of tea, coffee and cocoa as beverages are very much the stuff of myth and legend, and some of the earliest stories presented here should be treated as just that – fascinating and insightful, but with limited credibility. These mythical tales are chiefly a consequence of how the histories of the discovering cultures were recorded. In the case of tea, the character representing tea seems to have evolved

along with language in general, so it is difficult to be sure that in the earliest texts, the ‘tea’ being referred to was not some other bitter herbal infusion. In Ethiopia, where coffee has its origins, history was mainly verbal rather than written, and in Mesoamerica, the pictographic language of the early civilisations has only recently been deciphered and even then is open to different interpretation. This makes verifying the information difficult but does give a flavour as to the origins of these beverages.

1.3.1 Tea

Tea is intimately linked with Asia, herbal medicine and Buddhism. Almost 4000 years ago, in 2737 BC, the great herbalist, ‘Divine Healer’ and Chinese emperor Shen Nung discovered tea (Ukers 1935). The story is that he observed leaves that had fallen from a nearby and unassuming tree (Plate 1.1) being boiled in water by his servant. Upon tasting the brew, the emperor found it to his liking and thus green tea was ‘discovered’. This also indicates that the Chinese already knew the value of making water drinkable by boiling it to kill microbial contamination. This habit still remains in China to this day where boiled drinking water is preferred, being served still and warm, rather than the glass of cold iced water demanded by other cultures. Tea, as luck would have it, has antimicrobial properties from the inherent catechin and caffeine contents, so it has a double benefit when consumed hot! In Chinese herbal medicine, ‘bitter’ is seen as a desirable trait; it would be interesting to see how the story might have evolved if tea had been discovered by a society that did not value this taste to the same extent.

This part of the story of the discovery of tea is well-established mythology. What is less well known is what became of the Shen Nung, father of tea. Shen Nung, tea and Chinese herbal medicine are all intimately linked. The emperor went around tasting innumerable herbs and plants, cataloguing them and documenting their health-promoting properties, and published his findings in the *Pen ts’ao* or *Medicinal Book*. It was during the course of this work that he reputedly tasted a herb that was so poisonous that it could kill you before you had taken ten steps. Only tea leaves could save him, but alas none was available and he died after taking seven steps. How an author could publish a book having died during the course of his research is an interesting question, but not the only one surrounding the historical accuracy of Shen Nung’s book. In the discovery of tea, much hinges on the following passage in the good book:

Bitter t’u is called cha, hsun and yu. It grows in winter in the valleys by the streams, and the hills of Ichow, in the province of Szechwan, and does not perish in severe winter. It is gathered on the third day of the third month, April, and dried. (Ukers 1935)

It seems that again we have some controversy as both Szechwan and Fujian provinces claim to be the historical home of tea. This aside, there is a historical linguistic issue with this quotation as the term ‘cha’ came into use only after the seventh century. The first Chinese book of tea the *Ch’a Ching*, published in 780 AD by Lu Yu, is widely recognised as an authoritative text covering harvesting, manufacturing and preparation of the beverage, as well as its consumption and history (Ukers 1935).

Despite the conjecture about the precise origins of tea, it is widely acknowledged that it was discovered in China and spread from there to surrounding countries and then onto Japan, sometime during the eighth century. Not to be outdone though, Japanese have their own myths about the birth of tea in China. The Japanese version of events is that Bodhidharma, a Buddhist saint, fell asleep during meditation. Furious with himself, a not very Buddhist sentiment, and to ensure that this did not happen again he cut off his eyelids and threw them to the ground. A bush sprang from the ground where they landed, with leaves curiously of the same shape as his eyelids, which when brewed produced a drink that banished fatigue (Ukers 1935).

1.3.2 Coffee

Coffee's discovery is just as emotive, of which we have hints in the naming conventions of the types of coffee that are now consumed around the world. Coffee is thought to be a native of the Kefa region of old, which was also known as Harar, in Northern Africa (Allen 2000). Decimating the ancient kingdoms, Western empires divided Africa in the nineteenth and twentieth centuries to artificially create territories of control. The Kefa region is now in Ethiopia. Legend has it that sometime around 850 AD in Abyssinia, current-day Northern Ethiopia, a goat herder named Kaldi noticed that his goats were acting in a rather strange way, with even the oldest of them running and gambolling in the heat of the midday sun. Paying attention to this, he noticed that they were especially frantic after eating red berries from a small, broad-leaved shrub (Rodén 1981). These red berries were, of course, coffee cherries – the red, fleshy 'berry' covering the green coffee bean, the seed of the coffee tree (Plate 1.2). From here the legend diverts from Kaldi either to the abbot of a local monastery or, via trade, to the abbot of a monastery in Yemen. Either way, the resident abbot seems to have been concerned with a lack of alertness of monks during early morning prayers (Ukers 1922). Hearing of the effects the beans had on goats, he tried them on the acolytes, and again, we have a link between an invigorating beverage and keeping awake during religious ceremonies with, in due course, coffee trees becoming common fixtures of monastery gardens across the Arab world.

Coffee was not initially consumed as a beverage; instead, the beans were often mixed with fat and eaten as a high-energy snack during long journeys (Allen 2000). Between the first and fifth centuries AD, a lucrative trade route between Arabia and East Africa grew up, with slaves as one of the most valuable commodities (Segal 2002). Coffee seems to have been brought by the slave trains overland from Ethiopia and across to the port of Mocha, a name that still has meaning for the modern-day coffee connoisseur. It is said that coffee trees line the old trade routes as a result of discarded snacks along the way, germinating to produce the berry-yielding trees. The Mocha region, which is in current-day Yemen, became both a major area for cultivation and the ancient port from which coffee was exported to the rest of the world.

How coffee was converted from a food to a beverage is less clear, though there are accounts of a 'fermented beverage' being produced from the red coffee cherries (Ukers 1922). Like other food and beverage items, the modern-day incarnation of coffee is very different from its origins. In the case of modern coffee, the cherries are picked and

the outer pulpy ‘cherry’ removed either by soaking in water (wet coffee) or alternatively the cherries are laid out to dry in the sun (dry coffee) and the dried outer coating is removed by abrasion. With both methods the removal of the covering reveals the green coffee beans that are the cotyledons of the seed. But this is not coffee as we know it; the beans must be roasted to a dark-brown/black colour, the effects of which develop the rich aroma and characteristic taste of the coffee. The roasted beans are ground to a coarse/fine powder and finally infused in boiling water to produce what we would consider a ‘cup of coffee’. What brought about the move from beans in a ball of fat to the ‘roast and ground’ coffee drink we recognise today is far from clear, but another tale of the discovery of coffee may throw some light on the matter. This time the tale is of:

... the dervish Hadji Omar was driven by his enemies out of Mocha into the desert, where they expected him to die of starvation. This undoubtedly would have occurred if he had not plucked up the courage to taste some strange berries which he found growing on a shrub. While they seemed to be edible, they were very bitter; and he tried to improve the taste by roasting them. He found, however, that they had become very hard, so he attempted to soften them with water. The berries seemed to remain as hard as before, but the liquid turned brown, and Omar drank it on the chance that it contained some of the nourishment from the berries. He was amazed at how it refreshed him, enlivened his sluggishness, and raised his drooping spirits. Later, when he returned to Mocha, his salvation was considered a miracle. The beverage to which it was due sprang into high favour, and Omar was made a saint. (Ukers 1922)

Coffee initially gained acceptance in the Muslim world as an acceptable, non-alcoholic drink that also conveniently removed fatigue before prayer.

1.3.3 Cacao products

Cacao is more sensitive to agronomic conditions than are tea and coffee, the tree being broad leaved and thriving in narrow climatic conditions defined by shaded areas in latitudes within 20 degrees of the equator (Coe and Coe 2003). Cacao is *Theobroma cacao* according to the Linnaeus classification system. *Theobroma* means ‘food of the gods’, which shows either Linnaeus great reverence for the product or his understanding of the cultural relevance of cacao. Cacao originates from the rainforests of Central America, sometimes termed ‘Mesoamerica’, where on modern maps southern Mexico’s Yucatan peninsula, Guatemala, Belize, El Salvador and Honduras are located. The discovery and early use of cocoa are intimately linked with the ancient cultures of these areas – the Olmecs (1500–400 BC), Mayans culture (250–900 AD) and later the Aztecs (ca. 800 AD to mid-sixteenth century). These three cultures had advanced pictographic written languages, and real advances in deciphering them have been made only in the last 50 years. The Olmecs and Mayans are all the more mysterious as their cultures seemed to die out in great ‘collapses’, with one passing and the other flourishing in its place. The reason for the collapse of the Olmec culture is unknown, while that

of the Mayans is thought to be linked to environmental degradation and political infighting. The collapse of the Aztecs is better recorded and intimately linked with their conquest and colonisation by the Spanish. We have limited information about the Olmecs, with some remaining pictographs, but more is known about the Mayans. It is possible though that the word ‘cacao’ has its origins with the Olmecs as ‘*Kakawa*’, was a term reserved for what we now know as *T. cacao* (Coe and Coe 2003). Many Mayan pictographs remain with depictions of the cacao tree. Here, we are very lucky that the cacao tree is so distinctive, unlike the physically unremarkable tea tree and coffee bush, with the flowers and, after pollination, the seed pods actually growing directly from the trunk of the tree rather than at the ends of branches and shoots amongst the leaves. This makes identification even on ancient pottery relatively easy (Plate 1.3).

For the Mayans and Aztecs, the origin of cocoa was less a discovery than divine interventions in their creation myths. For the Mayans, cacao was provided to the newly created humans by the gods on the ‘Mountain of Sustenance’ (translated from the now-lost original pictographic *Popol Vuh* – originally written on perishable bark paper):

and so they were happy over the provisions of the good mountain, filled with sweet things, thick with yellow corn, white corn, and thick with pataxte (i.e. *Theobroma bicolour*) and cacao.

For the Aztecs, all necessary foods had their source deep within a mountain and were brought to the surface by the intervention of gods such as Quetzalcoatl (Coe and Coe 2003). Cacao’s divine nature is further reinforced through ancient records. The hot and humid climate of the mid-Americas was not kind to the bark-paper books, and only a handful survive in European museums and libraries, including the *Dresden* (<http://www.dresdencodex.com/>) and *Madrid Codex* (<http://www.mayacodices.org/>). In these depictions, cacao was always present with the gods. It was equally important when beginning the journey into the afterlife to have pottery containing chocolate-based beverages placed in the tomb. We know this because current-day analysis of the vessels has revealed that they contain residual theobromine and caffeine, evidence of the original presence of cocoa (Coe and Coe 2003).

For the Mayans, cocoa started as a drink for the elite where it was utilised as a spiritual beverage and valued to such an extent that cocoa pods and nibs were used as currency. Trade was very important in ancient Mesoamerica, especially as the seats of power were frequently not in the lowlands where cacao flourished. Long-distance trade routes developed, and the merchants and bearers were surely happy that the most valuable commodities, cacao and brightly coloured bird feathers, were not as heavy as the minerals and elements favoured by other ancient cultures.

Depictions on excavated pottery vessels help us to further understand how cacao was consumed – as a hot and cold beverage with copious amounts of esteemed ‘froth’ on the surface. The earliest known depiction of this traditional method is depicted on a vessel from the eighth century held in the Princeton Art Museum. The cacao liquid was poured from vessel to vessel, often at a distance, in order to raise the foam.

Before this, the cacao ‘nuts’ were ground with other additives as commented on by the Spanish Bishop Landa:

They make of ground maize and cacao a kind of foaming drink which is very savory, and with which they celebrate their feasts. And they get from their cacao a grease which resembles butter [cocoa butter?], and from this and maize they make another beverage which is very savoury and highly thought of . . . (Coe and Coe 2003)

The elite classes of the Aztec empire had their ruling city Tenochtitlan, which is close to modern-day Mexico City, far from cacao production, but through conquest, they gained cacao-growing territories. The nobles and warriors were important ‘classes’ of citizen in the top ranks. A third class of elites was that of the ‘long-distant merchant’ who were important as they were responsible for overland expeditions to source cacao and bring it back to the nobles and priests.

The Aztecs favoured cacao both as a beverage and as currency as noted by many Western travellers to that region. The first Westerner to ‘discover’ cacao was Christopher Columbus in 1502 off the coast of Guanaja Island, which is 50 km north of what is now Honduras. Because of translation and exaggeration what actually transpired has been summarised as an encounter between Columbus’s crew and a war/trade dugout canoe containing amongst other things:

[M]any of those small almonds which in New Spain are used for money. They seem to hold these almonds at a great price, for when they were brought on board ship together with their goods, I observed that when any of these almonds fell, they all stooped to pick it up as if an eye had fallen! (Morrison 1963)

Here, we must recognise that the additional terms and phrases used in the description of cacao products – including cocoa, chocolate, chocolatte, etc. – are all derivations or mispronunciations of native American words:

[T]he species name is cacao, and one can understand that Englishmen, finding it difficult to get their insular lips round this outlandish word, lazily called it cocoa. (Knapp 1920)

Sixteenth-century dictionaries translating the local dialects into Spanish give ‘*cacahuatl*’ (*huatl* meaning water) for drinking chocolate (Coe and Coe 2003). Francisco Hernández used the word *chocolatl*, which one assumes later became chocolatte and indeed finally chocolate as the name for the beverage, and in modern parlance, the confectionary.

Not all the people of ‘New Spain’, the conquered territories of Latin America or indeed ‘Old’ Spain took to this new drink:

The chief use of Cocoa is in a drincke which they call Chocolaté, whereof they make great account foolishly and without reason; for it is loathsome to such as are not acquainted with it, having a skumme or frothe that is very unpleasant to taste . . . (De Acosta 1604)

Nonetheless, there were those in New Spain who came to depend on their cacao beverage – especially the ladies of New Spain. Written in 1648 and published in Gaze's *New Survey of the West Indies*, the following account shows just how much this beverage was esteemed:

The women of that city [Chiapa], it seems, pretend much weakness and squeamishness of stomacke, which they say is so great that they are not able to continue in church while the mass is briefly hurried over, much lesse while a solemn high mass is being sung and a sermon preached, unless they drinke a cup of hot chocolattte [*sic*] and eat a bit of sweetmeats to strengthen their stomackes. For this purpose it was much used by them to make their maids bring them to church, in the middle of mass or sermon, a cup of chocolate, which could not be done to all without a great confusion and interpreting both mass and sermon. The Bishop, perceiving this abuse, and having given faire warning for the omitting of it, but all without amendment, thought fit to fix in writing upon the church dores an excommunication against all such as should presume at the time of service to eate or drinke within the church. This excommunication was not taken by all, but especially by the gentlewomen, much to heart, who protested, if they might not eate or drinke in the church, they could not continue in it to hear what otherwise they were bound unto. But none of these reasons would move the Bishop. The women, seeing him so hard to be entreated, began to slight him with scornefull and reproachfull words; others slighted his excommunication, drinking in iniquity in the church, as the fish doth water, which caused one day such an uproar in the Cathedrall that many swordes were drawn against the Priests, who attempted to take away from the maids the cups of chocolate which they bought unto their mistresses, who at last, seeing that neither faire nor foule means would prevail with the Bishop, resolved to forsake the Cathedrall: and so from that time most of the city betooke themselves to the Cloister Churches, where by the Nuns and Fryers they were not troubled The Bishop fell dangerously sick. Physicians were sent for afar and neere, who all with a joint opinion agreed that the Bishop was poisoned. A gentlewoman, with whom I was well acquainted, was commonly censured to have prescribed such a cup of chocolatte to be ministered by the Page, which poisoned him who rigorously had forbidden chocolatte to be drunk in the church And it became afterwards a Proverbe in that country: 'Beware of the Chocolatte of Chiapa! (Gaze 1648)

The first commercial shipment of cacao arrived in Seville from Veracruz in 1585 (Jamieson 2001), but it would be naive to assume that it had not found its way to Spain earlier, probably through the Jesuit religious networks whose senior influential priests introduced it to their social circles. Indeed, Baroque Spain with its flamboyant style would have been the ideal vehicle for the dissemination of ideals and standards to other Catholic regions.

1.4 Global domination begins

So, three plants in three different parts of the world have been discovered and utilised by the peoples of these regions. All have very different flavours and modes of consumption,

but all are linked in local psyche with alertness, vitality and enhanced physical ability. How did these drinks spread and why did people from far-away lands such as Europe, with very different tastes, choose to sample and ultimately embrace these beverages? The key to this is global trade and the desire of European powers for expansion overseas and the control of trade routes both overland and by sea.

The old trade routes including the 'Silk Road' and the 'Spice Route' were the key overland routes for goods to travel from China, across India and the Middle East through Persia (the old name for the Iran and Iraq of today) to Venice and from there to the rest of Europe. Spices, Far Eastern cloth, tea and coffee all came along these routes, on camel and horseback, from their native lands to European capitals. The British and Dutch decided that this convoluted route was both slow and inefficient, and probably more to the point, out of their control and with too many middlemen. They decided to go direct by sea. The Spanish and Portuguese conquests of South and Latin America brought them into intimate contact with cocoa, and later, their colonies were also linked to coffee.

1.4.1 Tea – overland and a race by sea

The etymology of tea, the derivation of the word gives some insights, on which we shall be brief, but they are informative. As discussed previously, the changing characters of the ancient Chinese language have added to the challenge of tracking tea through history earlier than 780 AD. The character *t'u* (Plate 1.4b) has a number of meanings, including sow thistle, bitter cabbage, grass/rush and, finally, tea. Only in the seventh century AD was the second horizontal stroke on the lower vertical of *t'u* eliminated, giving *Ch'a* (Plate 1.4a) – a character that has only ever had one meaning, tea.

Insights from the language of tea are not limited to ancient etymology; they allow us to track how tea spread from ancient China to the rest of the world. The term *Ch'a* was spread and assimilated by word of mouth through overland and short sea journeys to Japan (*Cha*), Persia (*Cha*), Turkey (*Chay*) and Russia (*Chai*). Most of these journeys probably began from old Canton (modern-day Guangzhou). The other ancient language that appears most prominently in the history of tea is that of Amoy (current-day Xiamen) on the southern coast of China in Fujian province, which is still an important tea-producing region. The Amoy dialect pronounced tea as '*Tay*', which can be traced to those regions who received their tea by sea routes such as the Netherlands (*Thee*), Italy (*Te*), Sri Lanka (for the Singhalese *Thay* and for the Tamils *Tey*), British (*Tea*), French (*Thé*) and, of course, the Latin *Thea* (Ukers 1935). Clearly, after the initial designations, languages continued to evolve, and in many circles and sea ports in Europe, '*Cha*' became linked more with the working classes. The educated citizens choosing to be associated with more refined languages, such as French, incorporated '*Thé*' in their everyday language (Hobhouse 1999).

Word of tea drinking spread, preceding the actual tasting of tea, and indeed, various Europeans repeated tales of far-flung lands, recounted to them by visitors to their cities, almost as gospel. Most notable was that written by Giambattista Ramusio (1485–1559) in the second volume of his *Navigazione et Viaggi* written in 1559. In this, the secretary of the powerful and influential Venetian 'Council of Ten' collected and published

travellers' tales including that of a Persian subject called Hajji Mohammed (or Chaggi Mehmet) who told of a herb '*Chai Catai*':

[T]ake of that herb whether dry or fresh and boil it well in water. One or two cups of this decoction taken on an empty stomach removes fever, headache, stomach ache, pain in the side or in the joints and it should be taken as hot as you can bear it. (Ukers 1935)

Interestingly, doubt has been cast on some of the travels of Marco Polo (1254–1324) who told of his journeys over 24 years to the court of Kublai Khan and across the whole of China. Why, if he travelled so widely across the vast lands of China, did he never come across tea, or if he did, why did he never comment upon it? Omission or fraud, we shall never know.

The first printed account of tea in English (*Chaa*, indicating a short sea trip or an initial overland exit from China) was in a 1598 translation of the adventures and travels of a Dutchman Jan Hugo van Linschoten (1563–1663) in his *Itinerio*, originally published 1596. He wrote that the Japanese:

[A]fter their meat use a certain drinke, which is a pot of hote water, which they drinke as hote as ever they may endure, whether it be Winter or Summer . . . the afore said warme water is made with the powder of a certain herbe called Chaa, which is much esteemed . . . (Griffiths 1967)

It is little wonder then that as the Europeans came into contact with such a highly esteemed beverage they wanted to sample it. The earliest mention of tea by an Englishman comes from a Mr Wickham – agent of the East India Company in Hirando, Japan, dated 27 June 1615 (Forrest 1973). No account of trade in the seventeenth century in general and regarding tea in particular would be complete without a mention of the East India Company, colloquially known as 'John Company' (Ukers 1935). The East India Company was formed in 1600 and traded until 1833, controlling all trade to 'The Indies' from England. The Dutch version and great rival to 'John Company' was the Dutch East India Company, established in 1602 with a 21-year monopoly on trade with Asia (Ferguson 2004).

The East India Company grew from a group of merchants, with joint stock options and a royal warrant for trade, to a global force with armies at its command, one of the greatest navies of its time, with administrative control over whole countries and the ability to mint its own money. In all, 'John Company' acted like a separate country or state, similar to Venice in its day. The East India Company lost its monopoly on all trade with the Indies in 1833 when trade was opened to all, with the obvious consequences of more competition and falling prices.

John Wickham wrote in 1615 to a Mr Eaton, another officer in the company in Macao, China, requesting a 'pot of the best Chaw'. One book that helps us date the absence of tea, coffee and chocolate is the *Treatise on Warm Beer – The Ufe and Necessity of Drinke* by Martin Grindel in 1741. In olde English, the letter 'S' was depicted as 'F', which we shall keep here for authenticity. In this article, Mr Grindel, whose whole treatise was based on the fact that drinks consumed warm were better for

you, mentioned tea only in passing, with no mention of coffee or chocolate, indicating that they were relatively unknown at this time. He stated right at the end of his article that:

I will prove by Giovanni Petro Maffei, the Jesuit who in his 6th book of Hiftories, related that the people of China do for the moft part drink hot the ftrained liquor of an Herb, called Chai*.

There is a footnote to this article:

‘Tea I fuppose, this treatife being firft wrote when that plant was fcarce known in England’. (Grindal 1741)

Tea first arrived in Europe in 1610, after chocolate (1528) but before coffee (1615) (Ukers 1922). This in itself gives an insight into the animosity and distances travelled between these nations in the fifteenth century (and beyond). Much is made of the Chinese drink ‘tea’, and in early references, it seems to be of a single type, rather than the whites, greens, blacks, oolongs, etc., of today. If Lu Yu’s book of tea (the *Ch’a Ching*) is consulted, in the section on preparation, he refers to seven processes from plucking to packing. Tea is (i) plucked, (ii) steamed, (iii) pounded, (iv) patted, (v) baked, (vi) packed and (vii) finally, re-packed (Lu Yu 780). This process, due to the initial steaming, would lead to green tea. Looking through the old literature there are multiple mentions of Bohea (black) and Viridis (green). With little else to go on and no knowledge of the manufacture it was assumed that two separate bushes gave green and black tea. Indeed, until the forays into China by people like Robert Fortune, Ex-director of the Chelsea Physic Garden in London, little was known about tea. Fortune arrived in China looking for tea in 1848. He ‘went native’ in disguise complete with fake ‘quill’ (i.e. ponytail) to penetrate into the interior of China and reach the tea-growing areas (Griffiths 2007). This to modern eyes may seem ill advised, especially the dressing up, but in the seventeenth century, it was illegal, punishable by death, for a foreigner to leave the ‘cantonment’ of Canton, the thin strip of land with warehouses, to which the ‘foreign barbarians’ were restricted in order to protect both tea and the Chinese way of life. Interestingly, despite these and other precautions, tea, coffee and cocoa bushes have all been stolen by the spies of Western nations and transplanted to other nations and regions controlled by them for commercial reasons.

Carl Linnaeus took the original Amoy pronunciation (*Tay*), and applying the country of discovery to his two-part naming system (genera first and then species), he came up with *Thea sinensis*. Subsequently, he names the two varieties *Thea viridis* and *Thea bohea*. An excellent overview of the evolvement of the knowledge that all tea comes from the same bush and finalisation of the current nomenclature *C. sinensis* L. (O) Kuntz is given by Griffiths (2007) in his excellent book *Tea – The Drink That Changed the World*.

It is interesting that in 2010 ~98% of the tea drunk in the United Kingdom was black and consumed with milk, and sometimes sugar (UK Tea Council 2010). Originally, the tea introduced into Europe was green and it was green tea that gave the British their

taste for this now national beverage as indicated by the Scots physician Thomas Short, who wrote:

[T]he Europeans contracted their first acquaintance with the green tea: then Bohea took its place. (Short 1750)

It is probable that 'black tea' (also known as 'red tea' by the Chinese as opposed to 'dark tea' meaning oxidised after heat inactivation, such as puer) was actually created on the long journey from China to the UK ports. The journey from China by East Indiaman around the Cape of Good Hope would have taken 6 months in the seventeenth century. During this journey, there would have been plenty of time for the leaves to oxidise and gradually turn more like modern black tea in character than green tea. Polyphenol oxidase – one of the key enzymes involved in the transformation of green to black tea – has been found to remain active at low levels in green and black tea even with efficient modern-day processing (Mahanta *et al.* 1993). Old-style processing with ineffective inactivation of the enzymes, packaging with low barrier properties to oxygen, and a long and arduous journey would have not been favourable in delivering green tea of the best quality. As Bohea was later thought to provide the best-quality black tea, maybe we could view this from a different angle and suggest that initially Bohea actually produced the lowest quality green tea with the best chance to oxidise during its journey and so it arrived as black tea. After overseas peoples found black tea to their liking, perhaps the Chinese responded to demand and through experimentation produced a product that modern eyes would recognise as black tea.

The idea that tea was originally only of the green variety is also supported by a 1685 pamphlet:

The Author of the book intituled, the embaffy of the United Provinces to the Emperor of China, Printed at Leyden in the years 1655. In the Description which he makes of Empire, speaks thus of tea. 'The moft excellent leaves of Cha or Tea, and found in the Provinces of Klangnon, and fpecially near the city of Hoeicheu; this leaf is little, and the tree thereof is very linke the fhrub called by Pliny, Rhus Coriarus, or Curriers Sumack' To make this drink of Cha fo much eftemed by the Indians, they only look for the firft leaf which comes forthe in Spring, which alfo is the moft foft and delicate, they gathr it with great care and one after the to'ther, and feperately, afterwards they prefently heat it a little while, and foftly on a gentle fire, and warp it in a very fine, thin and fsmooth piece of Calico, often ftirring and rubbing it with the hands, then they fet it on the fire again, being alfo wrapped up, and turn'd, and rub it the fecund time till it curls up together and becomes quite dry, after which they pour it into tin boxes, fealing and ftopping it very clofe, for fear the Spirits and the too fubtil quality, fhould evaporate, for after you have kept it a long while, if you put it into boyling water it will retake its former verdure extending and fpreading forth it felf; if it be good it leaves behind it in the Water a fmell and tafte very agreeable to the palate, and withal a greeifh colour. (Crook 1685)

1.4.2 Coffee – from persecution to epitomising the protestant work ethic

Coffee drinking, once discovered, seemed to have had a troubled journey compared to tea. Tea was seen as a healthy drink and, in a secular society focused on herbal remedies, rapidly grew from medicinal use to daily consumption. The word for coffee originally was through its Turkish form *kahveh* (Ukers 1922). Coffee, in the region in which it was discovered, appealed to the Muslim majority as being non-alcoholic and neither from grape nor from grain, received the Koran 'seal of approval'. Coffee drinking spread to Aden and from there to Mecca (The British Magazine 1750). This was initially thought as a good thing, but as the faithful of Mecca spent more and more time in the social coffee house – even preceding morning prayer – a backlash began. One idea is that an invigorating beverage consumed by the 'chattering classes' led to discussion of politics that was less than complimentary to the state and eventually dissent and revolution. The traditional sharing of the cup, also associated with alcoholic drinks, enabled the religious advocates not content with a more alert congregation to challenge coffee. In *ca.* 1515, when Kair Bey, governor of Mecca, found a group of worshippers drinking what he thought was liquor within the mosque, he was initially outraged. When he discovered that they were in fact drinking coffee, and learning of the properties of the drink, he concluded that it may incline people to 'extravagances prohibited by law', and he decided to suppress it. Later in 1570, Imams called for Mohammedans to renounce the drink as coffee houses were full and the mosques were almost empty (Ukers 1922). As coffee spread so did the restrictions, with the Turks being among the strictest. When coffee was banned around 1656, the Ottoman Grand Vizier Koprili imposed a 'two strikes and you are out' system: the first offence was met with a cudgelling (beating) and on the second offence the offender was sewn up in a leather bag that was thrown in the Bosphorous for the offender to drown (Roden 1981).

Europe's first experience of coffee probably came from travellers from the Levant – an area now occupied by modern-day Israel, Palestine, Jordan and Syria. The first European to go into print about coffee (or '*chaube*' as it was printed) was Leonhard Rauwolf, the town physician of Augsburg who, in 1582, published Rauwolf's travels, the tales of his tours in the Far East. He stated:

[T]hey have a very good drink, by them called Chaube that is almost as black as ink, and very good in illness, chiefly that of the stomach; of this they drink in the morning early in open places before everybody. (Rauwolf 1582)

Drinking coffee with sugar was also noted by Johann Vesling (1598–1649) during a visit to Cairo:

[S]ome did begin to put sugar in their coffee to correct the bitterness of it, and others made sugar-plums of the berries. (Ukers 1922)

In Christian countries one of the biggest problems seems to have been the colour of the beverage – black. Black was seen as an overly negative colour with connotations of Satan – the 'Devil'; indeed, priests petitioned Pope Clement VIII (1535–1605) to ban

the ‘devils brew’. As coffee was approved by Muslims, who banned Christ’s sanctified beverage – wine, it was clearly a brew to tempt Christians to the Devil’s side. This attempt backfired and Pope Clement, inspired by the aroma, drank the brew and proclaimed that it was too delicious to allow Satan exclusive use of it. So coffee was ‘baptised’ for the use of Christians. (Kilham 2001)

Also, a problem was the fact that coffee was a bean:

Although the use and eating of beans were heretofore forbidden by Pythagoras . . . ‘bacaufe that their flowers being fpotted with a black colour, did represent a melancholy fhape, and the souls that did dwell therein; And though there be others that reject them affirming that ufe of them dulls the fenfes, and causes troublefome dreams: Yet because they serve us in the nature of Victuals and Phyfick, I fhall not think my time and labour mifemployed, if I communicate to the publick, fomething on the subject of beans’. (Chamberlayne 1685)

The author goes on to discuss coffee further:

I will fpeak for the prefent of a certain bean of Arabia called Bon from which they make a Drink termed coffee which was heretofore in ufe amongst Arabians and Egyptians; and which is now days in very great requeft amongst the Englifh, French and Germanes The Firft that makes mention of the Property of the Bean, under then name Bunchum in the 9th Century after the birth of our saviour, was Zachary Mabomet Rafes, commonly called Rhafio, a very famous Arabian Phyfician . . . he was the firft, that did explain what was the meaning of unchum, affuring that it is hot and dry, very good for the Stomach, it hinders the unpleafant fmell of Sweat, and of Depilatory Oyntments. (Chamberlayne 1685)

Slowly but surely coffee spread throughout the Middle East to Europe and became generally available.

1.4.3 Chocolate – from lying down . . . to sitting up

As we have seen with the spread of tea and coffee, the controlling country of overseas territories, their empires if you like, very much influenced the nature of the new beverages. In the case of chocolate, the lynchpin was ‘His Most Catholic Majesty – the King of Spain’, and as such, chocolate was very much considered a ‘catholic’ beverage. Chocolate was thought to have been brought back to Spain by the conquistadors in the early 1600s, within the reign of King Philip III.

The consumption of chocolate as a drink continued in vogue, although with the addition of another import, sugar, originally from India, but subsequently grown in Spanish territories, it became increasingly popular – but more on this later. Drinking chocolate was initially very much the drink of the Catholic aristocracy and became associated in the minds of the Protestant North with the idle rich. Indeed, chocolate was often what the *Ancien Régime* drank before getting out of bed in the moments

between lying down and sitting up! (Schivelbusch 1992). The drink, although without the immediate invigorating properties of coffee or tea, was very nourishing and exactly what a weary aristocrat needed to prepare for the hectic social engagements of the day. Chocolate soon became a drink for the clergy and the wealthy on fast days as the devout could not allow food to pass their lips but liquids were allowed (*Liquidum non frangit jejunum*) (Schivelbusch 1992). Chocolate became an allowable substance being a drink rather than a food and was:

faid to be fo nutritive, that an ounce of them [nibs] contains more real nourishment than a pound of beef. (The British Magazine 1750)

Chocolate spread easily to the other great Catholic realms of Europe, most notable Italy, where the additives including musk, jasmine flowers and ambergris became even more opulent (Young 1994). Such expensive ingredients were more commonly associated with perfumery, indicating that the elite status of chocolate remained into the latter half of the seventeenth century.

The process to defat cocoa nibs to remove cocoa butter and create cocoa powder was developed in 1820 and patented in 1828 by Coenraad Johannes Van Houten, a Dutch chemist (Roden 1981). As we have seen, this was more of a redefining of the process that was known by the Mayans. From Van Houten's process, the cocoa drinks of modern day were created and the division between solid and liquid chocolate consumption was created.

1.5 From foreign fancies to the drinks of the masses

So, the three beverages having been discovered and transported to Europe at vast expense were consumed by society's elite. But why did they change from an interesting fashion item to the favoured drink of the masses? To answer this question we need to first look at what beverages were available in Europe before tea, coffee and chocolate arrived. Water was untreated and usually dangerous to health – this was before water was identified as a vector for typhus and other diseases, although it was common experience that drinking water frequently led to health problems. Milk soon spoiled and so was consumed only in rural areas, so what was left? The answer seems to be alcoholic drinks, and as wine consumption really became popular only in the nineteenth century, beer was the favoured drink. It seems strange to the modern eye, but beer was consumed at breakfast and throughout the day as 'beer soup' – a mix of beer and eggs served warm. Europe's relationship with beer has been long and complex both as a nutritional beverage (Fredrick the Great was a firm supporter) (Roden 1981) and as a form of social control (the Finnish army were given 7 litres of beer per day as part of their rations) (Allen 2000). Caffeinated beverages have been linked with the birth of the Industrial Revolution (Macfarlane and Macfarlane 2009). This, of course, is understandable, as even though ancient beer was rather weak, containing less than 3% alcohol, it would have been challenging to operate complex machinery whilst consuming 8–9 litres of beer per day. Beer was consumed from time immemorial to modern day, but in the mid-1700s, it was almost supplanted in the United Kingdom

by gin, which was originally introduced by the Dutch monarch ‘William of Orange’ in 1689 (Hallgarten 1983). What we often forget is that gin was not consumed in modern-day quantities and style, which is diluted with a mixer such as tonic. In the 1700s, gin was drunk neat and served in the same measures as beer (i.e. quarts and pints!) (Warner 2002). Beer was regarded as wholesome, while gin had the opposite reputation, hence the adage ‘mothers ruin’. So, we find tea and coffee being linked with the temperance movements driven by the middle classes as a way of saving the ‘inferior classes’ from their alcoholic ways.

Beer contributed to the diets of the urban and rural poor of Great Britain as a ready form of energy. Tea in the form commonly consumed in the twenty-first century in Europe, with milk or lemon or a little sugar, is a good source of water for hydration, health-protective flavonoids, fluoride and caffeine (Dufresne and Farnworth 2001) and is relatively light on calories. A further reason tea became popular amongst the working classes is another import, this time from India – sugar. Sugar followed trade routes through Persia and came to Europe, like coffee, via Venice. It arrived in England in 1318, Denmark in 1374 and Sweden in 1390 (Hobhouse 1999), but it was not until the eighteenth century that sugar became available to the general population at a viable price. Unlike Far Eastern cultures, the West did not view bitterness as a positive feature of food and beverage items, so sugar played a definite role in the increasingly widespread acceptance of tea and coffee. Sugar is a very energy-dense food and beverage ingredient, and tea and jam were important sources of energy for factory workers. Indeed, the bitterness of tea made it a convenient vehicle for the consumption of large quantities of sugar. Whilst a cup of tea with three to four spoonfuls of sugar is very sweet to those unused to sweetened tea, a cup of water with the same amount of sugar would be unbearably sweet. In modern-day India, tea is often consumed as street food – highly sweetened with unrefined sugar or jaggery, with milk and spices – and is used as a food substitute for relatively little cost. Sugar was a very important additive for the consumption of tea especially in the United Kingdom (Smith 1992). Coffee was also noted in Turkey to be drunk with some sugar, although milk was rarely added as it was linked in the Middle East with causing leprosy (Pococke 1659). In Europe, chocolate was consumed most commonly with sugar and other adjuncts, one recipe being:

Of Cocoa 700[pods], of white sugar, one pound and a halfe; Cinnamon 2, ounces of long red pepper 14 [chillies], of Cloves, halfe an ounce: Three Cods of logwood or Campeche tree; or instead of that, the weight of 2 reals or a shilling of Anniffeeds, as much of Achiotte, as will give it colour, which is about the quantity of a Hafell-nut. Some put in Almonds, kernels of Nuts, and Orange flower-water. (Colmenero 1640)

Tea, coffee and chocolate were consumed in the late 1600s in public places quite separate from the familiar bars and taverns. The first coffee house was actually in Oxford in 1650 at ‘the Angel at the parish of St. Peter in the East’, and in London, the first coffee house was opened in St. Michael’s Alley Cornhill in 1652 (Ukers 1922). Usually, all three beverages were served in these houses as a 1665 newspaper advertisement showed:

One Constantine, a Grecian, living in Threadneedle street, overagainst St-Christopher's church, London being licenced to sell Coffee, Chocolate, Cherb-
bert, and Tea.

The phenomenon of these houses was amazing, as by 1700, there were more than 3000 coffee, tea and chocolate houses in London. A small section of London of around Exchange Alley is shown in Plate 1.5, with ~12 coffee houses within an area of <0.5 square miles. These establishments became the open meeting places for business, politics and literature. Coffee houses were open to all who could afford a cup and so became egalitarian centres where class had no meaning as the following 'Rules and Orders of the Coffee House' (*ca.* 1674) were shown in many coffee houses (Schivelbusch 1992):

Enter sirs freely, but first if you please,
Peruse our Civil-Orders, which are these,
First, Gentry Tradesman and all are welcome hither,
And may without affront sit down together,
Pre-eminence of place, none here should mind,
But take the next fit seat he can find;
Nor need any, if Finer Persons come,
Rise up to assigne to him their room

So, despite the class system being alive and well, all men could sit together. The coffee houses were not, however, places for women. Women were confined to socialising at home, which soon led to the advent of the tea party and coffee party where women would entertain their friends. However, whereas coffee and tea were great levellers of class in the public eye, this same openness did not translate to entertaining those outside your station in life within your own house. Thus, the tea or coffee party were select events, highly ritualised to maintain social order and exclude those who did not have the benefit of high birth. It was not until the arrival of the tea gardens in London that men and women of all classes could meet in public for the consumption of non-alcoholic beverages.

Going back to the tea and coffee houses, people gathered in substantial numbers to discuss a great many things and some houses even began to record these musings and print them in what was the forerunner of modern-day newspapers and magazines. Indeed, individual houses became known for different areas of knowledge: Ozinda's chocolate house for news of the aristocracy; foreign and domestic news was the speciality of St. James' coffee house; and for items about learning you went to the Grecian.

Doctors used booths in coffee houses to meet patients and businessmen often gathered in other booths for commerce. After a while they started renting booths from the proprietors on a more permanent basis. Eventually, this even influenced the future of these coffee houses. Edward Lloyd's coffee house in Tower Street became the meeting place of seafaring men, and underwriters came to listen for news of ships and the sea. Merchants and ship owners came to insure their ships and so Lloyds of London – the insurance firm – was born. Until well into the 1950s, Lloyds offices were based around the booth design and runners referred to as 'waiters'. The oldest fire insurance firm in

London, the ‘Hand-in-Hand’ was formed at Tom’s coffee house and later transformed into the ‘Commercial Union Bank’ (Roden 1981). In Change Alley, Jonathan Castaing – the proprietor of Jonathan’s coffee house – began posting stock and commodity prices and it soon became the gathering place for stockbrokers. This, after the loss of the original shop in the great fire and rebuilding, is the basis of the modern-day London Stock Exchange (Werner 2008).

1.6 Tea, coffee and chocolate ‘go public’

Having helped establish printed journalism, the three beverages now used it. The first advertisement for coffee appeared in 1657. In an issue of the *Publick Adviser* on 26 May the London public were advised:

In Bartholomew Lane on the back side of the old Exchange, the drink called Coffee (which is a very Wholsome and Physical drink, having many excellent vertues, closes the Orifice of the Stomack, fortifies the heat within, helpeth Digestion, quickneth the Spirits, maketh the heart lightform, is good againft Eye-fores, Coughs or Colds, Rhumes, Confumptions, Head-ach, Dropfie, Gout, Scurvy, Kings Evil, and many others is to be fold both in the mornings, and at three of the clock in the afternoon. (Ukers 1922)

Chocolate was advertised 2 weeks later in the *Publik Adviser* on 16 June 1657:

In Bishopgate street, in Queens Head Alley, at a Frenchman’s house is an excellent West India drink called chocolate, to be sold, where you may have it ready at any time, and also unmade at reasonable rates.

Tea was first publically sold that same year at Garraway’s, also known as Garway’s, in Exchange Alley, but the first advertisement appeared only a year later in the *Mercurius Politicus*, No. 435, for September 1658:

That excellent and by all Physitians approved China Drink, called by the Chineans Tcha, by other nations Tay, alias Tee, is sold at the Sultaness Head, a cophee-house in Sweetings Rents, by the Royal Exchange, London. (Forrest 1973)

One idea is that Garraway was also the author of the *Mercurius Politicus* article:

Samuel Pepys tried all three beverages, referring to coffee as ‘The bitter black drink’. On tea ‘... and afterwards did send for a Cupp of Tee (a China drink) of which I had never drank before’ (Taylor 1955) – although we have no positive comment, there is no negative one either. On chocolate Pepys was more positive, commenting ‘To a coffee house to drink jocolatte, very good’. (Pepys 1664)

1.7 Opinion is divided on the merits of the three beverages

In the modern day, health claims are a key area on which consumers try to make informed choices on what to eat and drink. The sixteenth- and seventeenth-century things were no different, and health claims were being made in pamphlets, books and advertisements. Claims were, as today, sometimes contradictory and there were many on both the positive and negative views.

Much is made in the literature of phrases, such as ‘hot and drying’ or ‘cold and moist’, and to understand these we need to consider the medical system in vogue at the time, the Hipocrates/Galen ‘humorol’ system. This system linked four bodily fluids, or humors, namely blood, yellow bile, black bile and phlegm with certain properties, organs and temperaments, respectively. Thus, blood was warm and moist, and associated with the liver and sanguine or extrovert temperaments; yellow bile was warm and dry, associated with the gall bladder and choleric or dominating temperaments; black bile was cold and dry, associated with the spleen and melancholic or thoughtful temperaments; phlegm was cold and moist, associated with the kidneys and phlegmatic or accepting temperaments. Good health was determined by balance, so medicine was about identifying the properties of patients and foods/remedies and putting them together.

Thomas Garraway, gathering medical knowledge of the time, claimed the particular virtues of tea, the nature of which being moderately warm included:

It maketh the body active and lusty; It helpeth the Headache, giddiness and heaviness therof; It removeth the obstructions of the spleen; It is very good against the stone and gravel cleaning the Kidneys and Uriters, being drunk with Virgins Honey instead of Sugar. It taketh away the difficulty of breathing, opening obstructions . . . It is good against Crudities, strengthening the weakness of the Ventricle or Stomack, causing good appetite and Digestion, and particularly for men of a Corpulant Body, and such are great eaters of Flesh. (Ukers 1935)

It seems strange that coffee, initially gaining its success as a drink that promotes alertness, was in Europe more associated with melancholic personalities and indeed impotence. Indeed, in the Women’s Petition Against Coffee (1674), the anonymous author(s) claimed:

The occasion of which Insufferable Disaster, after a serious Enquiry, and Discussion of the Point by the learned of the faculty, we can Attribute to nothing more that the Excessive use of that Newfangles, Abominable, Heathenish Liquor called COFFEE, which Riffing Nature of her Choicest Treasures, and Drying up the Radical Moisture, has so Eunuchs our Husbands, and Crippled our more kind Gallants, and they become as Impotent, as Age, and as unfruitful as those Deserts whence that unhappy Berry is said to be brought. (Anonymous 1674)

Chocolate had a slightly easier time of it in the press, although it was seen as ‘cold and dry’ in the ‘humorol’ system and the custom to drink this with a variety of additives,

with their own properties, allowed these to balance cacao's inherent melancholic properties and probably be seen as a 'balanced' drink as and of itself. Dr Stubbs in the *Philosophical Transactions* affirms:

... that well prepared chocolate is an excellent diet for those who are scorbutic [have scurvy], afflicted with the [kidney] stone or arthritic pains, and to prevent convulsions; and yet some of the best physicians have observed that drinking chocolate to excess contributes to the formation of stones, especially in the gall bladder. (The British Magazine 1750)

Indeed, even in 1640 there were health cautions:

Any many do speak diversely of it, accordingly to the benefit, or hurt, they receive from it: Some saying, that it is stopping: Others, and those the greater part that it makes one fat. (Colmenero 1640)

Taking these claims within its stride, chocolate's reputation as an aphrodisiac (Dillinger *et al.* 2000) cannot have hurt sales and are understandable if we consider the sensuous mouth feel and its phenylethylamine contents, but in the seventeenth century these attributes were unknown.

If all three beverages were present in the markets and advertised strongly, why did the United Kingdom become a tea-drinking culture and much of Europe and the United States coffee-drinking cultures? What happened to chocolate? These issues, like any societal change, were a complex matter and probably involved issues such as availability of product and economic, cultural and public opinion. The East India Company, and indeed, the Dutch East India Company, that controlled most of the legal tea entering Europe obviously had a vested interest in the success of tea over coffee. Economically and politically, they had many allies, and indeed, they even used the press of the day. The Dutch physician Dr Nikolas Dirx writing under the pseudonym Nikolas Tulp (also known as Tulpii, or Tulpius) published his treatise on Medical Observations in 1652 (Ukers 1935), with positive views on tea, not surprising as he was a director of the Dutch East India Company. Tea was seen as a patriotic drink in England and was positioned as such to the public who supported the drink that supported their colonies. Great Britain's desire to gain further control over access routes to tea is intimately linked with China. The First Opium War (1839–1842) has its basis in a triangular trade of tea, silver and opium. The Qing Dynasty, not being interested in any of England's exports such as coarse cotton cloth, demanded silver in exchange for tea. The English soon ran out of available silver and looked for a product that they could sell to the Chinese to get their currency back. The answer they settled on was opium, which the East India Company produced in Bengal. Hindsight is 20:20 and we can see that if the Chinese were less restrictive in their currency demands or the British had chosen a more consumer-friendly trade item, the colossal problem that was created afterwards could have been avoided. The British did not invent the opium issues within China, but they clearly exploited them. When the emperor banned opium and attempted to stop British ships entering China, a small skirmish turned into a full-blown war where China was forced to cede in perpetuity access to five ports and the deep-water harbour

of Hong Kong. Despite the preponderance of Starbuck's and other high-street cafés, tea in 2010 remains the dominant hot beverage in the United Kingdom.

Germany was never really on the world stage in the seventeenth and eighteenth centuries and had to buy all its coffee from the Dutch. Coffee was, hence, a great drain on German currency and with substantial amounts of money leaving the country. This led to coffee being labelled un-German and 'chicory-coffee' being invented (Smith 1985). Chicory being grown in Germany stopped the flow of German currency to foreign countries and indeed to trading nations such as Britain and Holland – sometime bitter rivals. Indeed, 'coffee sniffers' roamed the streets of Germany tracking the distinctive smell of roasting 'bean coffee' and imposing heavy fines (Smith 1985). Although restrictions on coffee in Germany were lifted soon after the use of chicory to adulterate 'bean' coffee spread to France and beyond. An interesting anecdote regarding Prince Bismarck goes that upon entering a French country inn he asked if the innkeeper had any chicory. He had, so the count asked for it all to be bought to him and soon had it all. 'Now', he said, 'go and make me a pot of coffee!' (Roden 1981). Bean coffee though was soon back and became established as the hot drink of choice.

King Gustav III of Sweden, who is said to have been interested in the different merits of tea and coffee, undertook an interesting, if ethically dubious, experiment. Two identical twins were tried for their crimes and condemned to death. The sentence was commuted to life imprisonment on the proviso that one twin drank tea and the other coffee for the rest of their life. Unfortunately, the doctors supervising the experiment were the first to die, presumably, of natural causes. The twin who drank tea died first at the age of 83, and ever since coffee has been the dominant beverage in Sweden (Smith 1985).

One of the greatest coffee-drinking cultures, based on volume anyway – the United States – has tea, or rather taxes placed upon tea, as the root cause for coffee's success. It is most likely that tea first arrived in the Americas either via official British exports begun in 1711 or via smuggled Dutch tea (Walsh 1892). The Tea Act of 1773 was, some say, the root of the American Revolution and the birth of the United States. Taxes on everyday objects such as tea were all about raising revenue for war efforts. The Stamp Act of 1765 tried to impose taxes on overseas colonies to get them to pay, at least in part, for the British troops that protected them. This was repealed in 1766 as it was supremely unpopular with the colonists and a political pawn for the government opposition at the time led by William Pitt. The tax was reinstated in 1767 amongst other items such as lead and glass and the American colonies chose not to import from Britain. This did not do down well with the merchants of London and so all taxes apart from a 3p per pound (lb) tax on tea were repealed. With the colonists turning to Holland for tea supplies, the Tea Act of 1773 sought to give the East India Company sole rights to trade tea to the Americas direct, cutting out other British and American merchants. This was met with the predictable dissention by the colonists, culminating in 'The Boston Tea Party' of 16 December 1773, when a party of colonists dressed as American Indians boarded British ships moored at the Griffins wharf (Ferguson 2004). They brought the tea onto the deck, broke open the chests and emptied the contents into Boston harbour. This night was followed by other 'tea parties', such as the Greenwich Tea Party, when tea was burned in the Market Square on 22 December 1773 by colonists dressed as American Indians, and the Philadelphia Tea Party (Ukers 1935).

General dissent led to tea being thought of an un-American, despite chocolate being present in the colonies and coffee becoming the national beverage. Chocolate's long-term success has been as confectionary rather than drink and is another story.

1.8 Tea, coffee and chocolate – the future

So, with such vibrant, colourful and formative pasts and their current status as world-dominating beverages, apart from drinkable water, tea- and coffee-based beverages are the big two. Basically, they contain caffeine, polyphenols (see Chapters 2, 3 and 5) and, depending on final make-up, sugar. As we go forward, we are gaining more insight into the health-promoting properties and indeed mechanisms of how the active principles are having the beneficial effects on health and well-being (see Chapters 4 and 6). More information allows the consumer to make more informed choices. Nutraceuticals, food as medicine, is an established and growing area that is well promoted by the 'pseudo-nutritionists' of the popular press, and as a result, tea, coffee and chocolate are not the only plant-based beverages out in the market. What of rooibos and maté, acai and yumberry, and other products which year on year make their assault on supermarket and health-store shelves through the medium of marketing and new product innovation. Will tea, coffee and chocolate hold their own? The author for one thinks, and hopes, that they will, for despite their undoubted health-promoting benefits, they are what the human race wants on a daily basis, great tasting, invigorating beverages to be consumed on innumerable occasions. Truly, we cannot imagine everyday life without tea, coffee and chocolate. Over 6 billion people cannot be wrong!

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