

## The True History of Chocolate

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Michael Coe

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Carol Robbins: ...University and Curator Emeritus in Yale's Peabody Museum of Natural History. For many years, he was advisor to the Center for Pre-Columbian Studies at Dumbarton Oaks, Washington. He has conducted field research in Mexico, Guatemala, Costa Rica, Connecticut, Massachusetts, and New York. His research interests include Khmer culture history and the archaeology of Colonial New England, in addition to the Olmec and Maya civilizations of Mesoamerica for which he is perhaps best known.

He is a member of the National Academy of Sciences and he is the author of 18 books and monographs. I am not sure whether that tally includes *Final Report: An Archaeologist Excavates His Past* which will be released later this year. As I reviewed the titles last night, I realized the extent to which many of Michael Coe's books represent personal memories for me, steps in my own attempts to interpret the art and cultures of our collection. So, I offer a personalized tribute.

In 1968, when Michael Coe's *America's First Civilization: Discovering the Olmec* was published, I was secretary to the Director at the Dallas Museum of Fine Arts--as we were at that time. The book was Director Merrill Rueppel's Christmas gift to me. The photograph on the back dust jacket, Michael Coe standing beside the Las Limas figure became an enduring image for me. About that time, I acquired *Mexico* and *The Maya*. Other survey books have appeared but rarely do their descriptions rival Michael Coe's vivid word pictures. When *The Maya Scribe and His World* was published in 1973, I splurged and bought a copy.

If I were trying to buy it today, I could not afford it. I think *Breaking the Maya Code*, *Reading the Maya Glyphs* with Mark Van Stone and *The Art of the Maya Scribe* with Justin Kerr and *Angkor and the Khmer Civilization*, the last two reminders of Michael Coe's fairly recent lectures here. And then, of course, there is *The True History of Chocolate* written with Sophie D. Coe, and I treasure my copy all the more because it came as a gift from Ned Boshell whose commitment to this series has made this evening possible. Thanks to Ned and Raynette. Remember that the evening's festivities will continue in the

restaurant immediately after the lecture. Josh Rose has asked that I remind you, walk up the concourse and present your blue slips to be welcomed for the book signing and the chocolate tasting. My personal thanks to Michael Coe, we are privileged to have you with us again tonight.

Michael Coe:

Thank you, Carol. It is a pleasure to be back here once more talking upon a completely different subject than what I talked about last time which was, of course, the Khmer and Angkor Wat and the great city of Angkor.

How I got into this business about chocolate... It's sort of amazing to me that I am considered a great chocolate expert by people who don't know much about chocolate greatly. Sometimes I feel like a jack of all trades and master of none. How I really got into this was through my late wife, Sophie, who was in the last decades of her life, a food historian, an anthropological food historian studying the cuisines of a new world. She wrote this book called *America's First Civilization* which the UT Press here published. It's has been a very successful book.

When she covered Mexico and Central America and that, and particularly the Maya and Aztec, she felt that she had not done real justice to the subject of chocolate and she began to research it. And she researched it for about two years, decided she was going to write a book that dispelled a lot of the absolutely ridiculous stuff that have been written and still is written, I am sorry to say, on the history of chocolate.

There is more mythology about this that appears on the internet than you can possibly imagine. There is hardly an internet site that isn't made out of whole cloth on this subject. They'll tell you that Columbus took the chocolate bean back to Spain, that's why we all drink chocolate and so forth. Columbus didn't. He saw chocolate beans but he didn't have the farthest idea what they were. Here is a guy who thought that it was off the coast of China after all. He never saw a chocolate being used and it goes on and on and on. It's really depressing.

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So, she decided to write a book called the *True History of Chocolate* and unfortunately, she only got a couple of chapters done. She had all the research done. She never lived to see it and I promised that I would finish it and it was a real pleasure to do this. I took all of her notes to Italy, to Rome, which is a place where I like to write books, and stayed there until I had written it. So, in a way, this is her book

and that's why she is senior author. She thought the whole thing up in the first place.

It needs a new edition I will have to admit because there is a lot of recent stuff that's been done on that. And it's a story that is incredibly important, we now know from Mesoamerica, from the people of Mexico and Central America, particularly the Maya. In their culture, we now know, from the earliest times on, right through the Spanish conquest and even until today, the consumption of chocolate and particularly the chocolate drink was enormously important.

So, we will talk about the tree. Where does chocolate come from? Years and years ago, René F. Millon, a very distinguished archaeologist who, when he was a graduate student at Columbia, wrote a dissertation called *When Money Grew on Trees*--a wonderful title because the chocolate bean, the beans of the cacao tree, were used as currency in Aztec times and also among the Maya at the time of the conquest. Now, I am not going to talk about that tonight; I am going to talk about chocolate as a drink and as food.

It's a tree called Theobroma Cacao: Theobroma, meaning food of the gods in Greek, and Cacao, C-A-C-A-O, being the real name of chocolate. Where the word chocolate came from is a very complex subject and I am not even going to go into that here. Most of what people say about the name and where it derives is again mythology. We really don't know.

The real name of chocolate is cacao and the tree is the cacao tree and the cacao tree is an understory tree. It grows in the tropical forests but underneath a canopy of higher trees and it doesn't look like much; it's sort of sprawling and squiggly looking thing. It's a kind of thing that you certainly wouldn't plant in your back lawn as an ornamental because it's not a very good looking tree. It produces flowers all over the trunk and on the larger branches these tiny little flowers, I won't say they are as small as a pinhead but they are certainly no bigger than a tack and they're little, white, purplish-white flowers and thousands of them on the trunk. A few of these get themselves pollinated properly by midges, that's what pollinates the tree. Eventually, you will have on the tree sprouting out from it these pods which contain the seeds of the tree. These are the cacao pods.

Now, they are really tough on the outside. This tree cannot in the wild really disperse its seeds on its own. So, monkeys in the wild--and people aren't around--monkeys and parrots, large birds like parrots with tough beaks will tear these pods of flower and consume them. This is from a classic Maya plate out in California, I believe on show in San Francisco at the brand new de Young Museum there and shows a

spider monkey running along with cacao pods. Now, why would wild animals go in the first place for these pods? If you cut these pods, the right pods open, which are sort of like the size of a small tiny football, you will find inside the seeds covered with a delicious white pulp. It really is good.

So, there is this gooey pulp. This is my friend [inaudible] in Bali of all places opening up one of these things because cacao is now grown in the tropics of the world, all around the world, particularly in Africa and in Indonesia, places where it was taken after the conquests of the New World and during the colonial period. It's a tropical tree; it cannot tolerate frost or anything like that. So, it's only in the tropics. So, if you open it up, you will find it looks like this. It doesn't look chocolate at all; the seeds are inside that pulp. Then as I said, the pulp is delicious and that's what the animals are after and probably what early humans were after, when they first got interested in this tree.

So, then what do you do? What's the process to turning this into chocolate and who did it?

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This is really rather a mystery because it's a rather complicated process. It has five important steps to it once you cut these pods off the tree. The first is to open them up with, let's say, today with a machete and then dumping the insides out into a tray or a vat or anything like that and letting them ferment probably for usually something less than a week; five days or something like that and it builds up heat. The heat kills the seed that's inside there. It doesn't germinate any further which is important and the pulp runs off as alcohol or let's say mild alcohol that is sort of a wine as the sugar is turned into alcohol leaving the seed itself.

You can actually drink this wine; it's got a bit of a kick and I am surprised that people haven't taken more advantage of this because it is rather good. So, at any rate, but they had other things to make hooch out of, so don't worry. So, they ferment it, that's the first part of the process.

The second thing is then you have the seeds which are wet from the fermentation process, you have to dry them and this is in Belize drying them in the sun, just laying out a piece of canvas and let these things dry. So, fermentation, drying the seeds. The seeds are bitter; the animals and early humans were not interested in the seeds because they contain bitter alkaloids, I will talk about those later, but you have to dry them. So, that's the next part of the process.

Then you have to roast them. Until you roast these seeds, they don't taste at all like chocolate, not the slightest bit, I mean barely. You take just the dry cacao seed and get a little taste of chocolate but not much. It is not until you start roasting it that the full chocolate flavor starts coming out. The chemistry involved in this is enormously complex because there's hundreds of compounds in the seeds of chocolate, so called beans. Then you have to winnow them because there is a sort of skin on the outside of these seeds and you have to get rid of that, that's a winnowing process. So, that's the third part of the step that has to be gone through.

Then they have to be ground and the native way of doing this in Mesoamerica, which is where this chocolate was invented in the first place of this process, is to grind it with a mano and metate. The same way as the housewife grinds the soaked corn, the corn that's been soaked in lime to make the dough for tortillas and tamales. The same process is closely related to it, but they apply heat underneath to it to really bring up the flavors of the bean. So, they take the same manos and metates, they heat them up, and she will grind this stuff into the solid chocolate mass.

So, those are the steps; fermentation, drying, roasting, winnowing, and grinding, and whether it's a local producer and his wife in a little place down in Southern Veracruz or in Belize or anywhere, the process is exactly the same as it would be in this way in the great big chocolate producing multi-national firms today; Nestlé, Hershey's or Cadbury's or any of those people. The process is the same everywhere, it's just the machinery is different. That's all.

What you end up with as you can see here, I'll get my laser light, those are the dried beans now. There is the pod, the original pod, and then it's ground and they make a cake out of it, a dried cake. Now, that's solid chocolate without any question and that is turned into a drink usually drunk in a gourd and I will show you Mayas doing exactly that. It's flavored and one of the favorite flavors is vanilla, which is again a Mesoamerican domesticate that was rather complicated production. It's actually an arboreal orchid that grows in Veracruz originally. It's been taken all over the tropics in the world now, particularly in Madagascar.

But it has to be fermented in a very special way-- very difficult to get the plant to germinate and all of these things, so at any rate. But vanilla was a favorite flavoring for the Mesoamerican peoples. So was chili pepper and many other flavorings were added to it. Certain flowers of certain trees and the sweetener was probably, if they used it at all, which they did from time to time, was either native honey made from the native stingless bees or else made from the expressed

juice from the stalks of maize.

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Now, where did this take place, this mysterious invention? We don't know for 100% but it had to have been in Mesoamerica. It had to have been in the lowlands. There is some evidence and so far it's entirely circumstantial that the Olmec area here on the northern side of the Isthmus of Tehuantepec in southeast in Veracruz, state of Veracruz, is where this happened among the Olmec. You have seen beautiful Olmec pieces in this exhibit here and in the permanent collection of this museum. This was the first great civilization of Mesoamerica and I don't care what anybody else says, history will absolve me. This is the mother culture of all other Mesoamerican cultures. This is the first great civilization, equivalent to what Greece and Rome were for Europe throughout European history. One that people never forgot.

And I am positive, -- well, I won't say, positive but I will be willing to bet we are going to find evidence that the Olmec were the first ones to do with this. The reasoning is that the word 'cacao' is found in practically all Mesoamerican languages for chocolate. The word 'cacao' actually is a lone word in those other languages. It really originates in a language that was spoken in Olmec country, we called Mixe-Zoque. I am almost certain that was the Olmec who did this but I would say, the proof is going to come shortly because they are now analyzing Olmec pottery to find traces of chocolate in them. The work has just started.

If you don't know anything about the Olmec, you should learn--they are great civilizations. They are famous for their colossal heads and these are really early. They were making colossal heads like this tremendous huge vessel monuments of stone brought in from 75 or 100 miles away on rafts at the time when the poor old Maya didn't even know how to make pottery. It's an incredible civilization, I mean really exciting, wonderful artists. The first great city of the New World was built by these people at San Lorenzo in Southern Veracruz. So, I'm attributing the invention of chocolate to them because I think they did it, but I can't prove it yet.

The first really hard evidence for who might have had early chocolate comes from the Maya area though and it is hard evidence. This is the site of Río Azul in northeastern Guatemala, very near the Belize border. This is an old Guatemalan map so it doesn't show Belize as a country, but it is. That's Belize right there. It's right near the Belize border.

At Río Azul an expedition worked on tombs at Río Azul, and found--

this is a great Maya pyramid probably about 450 A.D. and the king, who had just died, is being buried here in a tomb dug down into the bedrock containing early classic Maya pottery. This is the remains of one of these rulers of these kings. Everything organic is gone because this is the tropics. This is way deep in, the hieroglyphs written up here and then various pottery vessels around here. Some of them containing animal bones, fish bones and so forth but the cylindrical ones were something else, the taller ones.

One of these turned out to be really important at Río Azul. This is now famous, you even get this on the Hershey company website. This is a screw-top jar sitting on a pot stand here. It's early classic about 450 A.D. during the early classic. This top screw is on and off like the top of the Mason jar and it's got hieroglyphs around it on stucco, created on stucco.

Now, we can read these hieroglyphs now. 25, 30, 40, years ago, we couldn't do this. I mean, I have been talking through my hat if I were trying to tell you what these hieroglyphs said. We now know what they say. David Stuart here, in the lower left, who is now full professor, named professor at University of Texas in Austin, he started studying hieroglyphs when he was eight years old. By the time he was eleven, he gave his first public lecture on the subject and he got a MacArthur Fellowship eventually, the youngest person to ever get one. I mean the guy is a genius.

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He found out how to read this hieroglyph here. Here it is and it is to be read as *ka*. This is written phonetically now and this is also *ka* here, just another way of writing this. It's a fish and this is a fish fin here. So, it's *ka ka* and this sign down here is *wa*, but the final vowel is not pronounced when you are -- this is a syllabary and we are reading this as syllable. It's cacao. So he said, this thing might have chocolate in it. This is a vessel for chocolate, which is exactly what this inscription tells you and it tells you who the king is who owned it.

Well, they send this vessel along with several others that had a kind of residue on the bottom to the Hershey company lab in Hershey, Pennsylvania and lo and behold, they found two alkaloids there. These alkaloids are well known because they are the two alkaloids that occur together and are peculiar to chocolate. They are caffeine, which you are quite familiar with, a stimulant, a diuretic, as you know it makes you go quickly to the bathroom and theobromine, which is the milder stimulant and diuretic. The theobromine is peculiar to chocolate. So, QED but with chocolate residue. They've now gone and found this in a lot of Maya vessels.

That famous vessel that's upstairs, that cylindrical piece that shows a sacrifice taking place, it's a wonderful late classic Maya vase that contained chocolate at one point. Every single Maya cylindrical vase that we know of like that contained chocolate because it says so on the hieroglyphic inscription along the rim.

Well, they found it even earlier in the Maya area. This again is University of Texas. Texas does all these things. Here is the site of Colha in Belize, which the University of Texas has been digging for years. At 600 B.C., which we called the middle pre-class or middle formative period, I mean long, long before, thousand years before that Río Azul, they analyzed a number of these vessels and found inside them chocolate--that is theobromine and caffeine residues. What were the spouts for? Well, we know think that those spouts were borrowing the chocolate air into it and making a froth on the top and I will show you about that later on.

We have many descriptive pictures of these indications of these people drinking chocolate on pictorial Maya vases, most all of which come from the late classic, although, all through the early classic, that is through the whole span from 300 A.D. through the time when the civilization disappears by 900 A.D., they are drinking a lot of chocolate at all important occasions.

This is actually a roll out done by my friend Justin Kerr in New York. He is a New York photographer and a great student of Maya art and so forth. He invented this roll out camera. So you can take a cylindrical vase and then roll it out so you could see it as a mural and really study it. So, this is the Justin Kerr roll out and it shows a ruler seated on his throne. This is probably around 700 A.D. and here are these underlings, both with the same costume, who are bringing in offerings to him probably tribute from another important politician and they have brought in chocolate for him to drink. On the top of here there is froth. Now, how do we know that it's chocolate? Because that hieroglyph over there is the same glyph, believe it or not, that was on the Río Azul screw-top vase.

So, he is drinking chocolate and down here is what he is going to eat. They brought him some nice tamales covered with sauce here and certainly those are corn tamales there. So we have many scenes of this and we know that chocolate was used not only to bring in to sort of butter-up important kings and politicians, but also probably to seal marriage negotiations. Still important today in the Maya area, chocolate during marriage negotiations and during marriage ceremonies. Probably sent in quantity of the chocolate beans to people and to important kings as tribute.

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We have that on the Bonampak murals. We understand now, huge sacks of chocolate beans brought in.

Probably, it had the role in this culture that Champagne does with us. That is it is something that you crack open. Even if you cannot afford it, by God, you got to have Champagne for your daughter's wedding. It's not something that's used as kind of everyday by everybody; it's very much a status and elite thing.

Now, probably at the same time, it was money; it was valuable. It was used as a small change in negotiating in marketplaces. So, it already, chocolate had tremendous value, but it was always a drink. For the first couple of thousand years of its existence, it was a drink, not a solid chocolate bar at all.

There was even a chocolate god, who was actually a form of the Maize God.

This is a carved vase from Dumbarton Oaks. It's actually a carved stone vase, of bone from Dumbarton Oaks in Washington probably again about 450 A.D., the same time as Río Azul, those burials there and it shows the Maize God seated on his little throne here. His name is here, it tells you what's his portrait and this guy is popping off cacao pods all over his body. So, the Maize God, very important, central god in Maya thought and religion all the way back to the Olmecs, was also the god of cacao, of chocolate. You have many representations of the Maize God in different periods and different places in the Maya area. This is in the Popol Vuh Museum in Guatemala City and it's a wonderful one from the Pacific coast of Guatemala showing what is probably the Maize God or a Goddess of some sort with cacao pods popping out all over the place. These look so realistic that they could have even been cast from actual molds of real cacao pods.

When you reach into later times, people like the Mixtecs, Zapotecs and so forth, we know from the codices that they made and things like that, they also took a lot of cacao and very important in marriage negotiations and things of this sort, big chocolate drinkers. They like the froth of the top, we know that from Aztec accounts that the froth that you got up was extremely important. Now, from colonial times on, you have a swizzle stick to do this. My wife and I were convinced and I am still convinced that this was introduced by the Spaniards. The native way of making that froth was to pour as in this scene for early colonial times, an Aztec woman pouring from a great height, from one vase into another to make this froth on the top.

Here is from a Maya vase, now in Princeton, late classic, some 750 A.D., much earlier than this. She is pouring it from a great, great height in the palace of an underworld god--beautiful scene here. The froth of that was like the bubbles in Champagne; you wouldn't want to drink flat Champagne, they didn't want to drink chocolate without the lovely froth on top which they spooned off with tortoise shell or bone spoons very, very carefully. That was the first thing they went for.

Now, when the Aztecs got into Central Mexico, they came in somewhere from the northwest, we really don't know exactly from where. They came in as semi-Barbarians. They never heard of chocolate in their lives. They got in there, they found in the older civilizations around the valley of Mexico, where Mexico City is today, they found people drinking and highly valuing chocolate. They wanted to do it too, but they had to import it, they had to get theirs from the tropics, from the Maya area and places like that, which they did. This is a great, a high ranking Aztec ruler in a wonderful early Colonial codex showing the splendor of these people. So, they quickly became civilized. And among the Aztecs, we have lots of documents on this, lots of information from Father Sahagún and other early chroniclers.

It was a completely elite drink. The king, the court, the nobles, they could drink it. The highest ranking priests, the highest ranking officers of the army could drink it, but it was very restricted; you had to be a proven warrior to drink it. For everybody else, they weren't allowed to have due to sumptuary laws. The same thing was true all through Mesoamerica; among the ancient Maya and probably among the Olmec, who almost certainly invented it. So, it was quite a different thing.

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This is downtown Tenochtitlan, now of course underneath Mexico City, although today you can see at least part of that great temple to the Rain God and to the God of War, Huitzilopochtli. The Aztecs knew that the best chocolate came not from down on the coast of Veracruz or over in Chiapas, but down here in the province of Soconusco in Colonial times. Down in Chiapas and going over into the Pacific coast of Guatemala, this was the top quality cacao from one particular variety of cacao which among chocolate produces today is called criollo. Today the best and finest chocolate originates here.

So to get it, they sent their armies down and they took this province over, even though it was nowhere as near the rest of the Aztec Empire and they kept that. It was extremely important to them, they had to have that and when the Spaniards conquered the Aztecs and

eventually picked up chocolate drinking, they wanted this stuff too. This is the kind of chocolate that arrived at the Spanish court, it was criollo chocolate. And even today among chocolate producers, chocolate that is largely criollo chocolate is still the best.

We have many descriptions from the Spaniards of chocolate drinking among the elite and the royal court from Bernal Diaz del Castillo, a wonderful description of the emperor Motecuhzoma taking his chocolate. This is a wonderful illustration done by a graphic artist back in the 1920s for a book on the Aztecs illustrating Aztec life, and it's really good, it's really accurate. That's exactly what he really looked like, the emperor drinking his chocolate, because that artist has him spooning off the froth on the top of it.

Today, well, if you live in the north and go skating in the outdoors, you want to drink hot chocolate. It's really lousy what they give you, but they squirt a lot, they used to squirt a lot of whipped cream on the top. Now it comes out of a spray can, but it's the same idea, only here it was pure chocolate.

So the Aztecs had it and many, many descriptions. So important was the bean, the Cacao bean, that the emperor had huge storehouses of chocolate beans which were sort of like Fort Knox is to us. Absolutely tremendous bins of this stuff that he paid people with, paid his army, gave his army to take out and so forth. It was so valuable to the Aztecs that there were even chocolate counterfeiters who could counterfeit these beans.

Later on when the Spaniards came they began to counterfeit Spanish gold money. They were very, very good at this.

Well, okay, so how does it get to Europe? Well, the story is that Christopher Columbus brought it. That story is complete rot, I mean, totally made up. People who write this stuff, on the Internet especially, think that nothing is known about the Aztec, I can write whatever I want about it and they sure do. I can tell that's ridiculous.

Columbus, on his fourth voyage off of the coast of Honduras--the north coast of Honduras, the island of Guanaga in 1502, according to the account from his son, Ferdinand--captured a great Maya trading canoe, huge thing. I mean, it was as long as this auditorium and in the middle of it was this great big fat trader and his slaves and his wives and everybody else and he had these strange beans that the Spaniards thought were sort of like almonds. They didn't know what they were. They were amazed and when anyone of these were dropped to the bottom of this great trading dugout, they snatched it up as though one of their own eyes had fallen out of their head. But he hadn't any idea

of what it was because he never got to the mainland of Mesoamerica. He never saw a chocolate being used, hadn't the foggiest idea of what it was. So that's one myth that has to be dispelled.

So who did take it? Well, other of these stupid internet sites tell you that Hernán Cortés took it. Well, we know a lot about what Hernán Cortés took back to Spain because it was all inventoried and everything and there isn't one mention of a chocolate bean in any of those documents. So who did take it?

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Well, the earliest that my wife and I could find, actually Sophie was the one who found it, was a Dominican document where a Dominican priest took-- they were in the Alta Vera Paz of Guatemala among the K'ekchi Maya and they took a group of K'ekchi nobles, high ranking ones, to Spain to the court of Philip II. And Phillip II welcomed them, and he was worried that they weren't wearing enough clothes because it's cold in Spain in the winter time. But at any rate they made chocolate for him, and that is the first time we have mention of chocolate in Europe.

It went to the Spanish court; the Spanish court loved it, especially the women of the Spanish court, but they had to add sugar to it before it was any good. And sugar was brought from Africa to Mexico and Central America, and of course all through the Caribbean by the Spaniards.

And at the same time they had to bring in people to work because the Indians were either dying or refused to work on their plantation, so they began importing slaves and a lot of the chocolate. In fact, most of it that was brought back to Europe all through colonial times, well through the nineteenth century into the early twentieth century, was produced often by slaves.

Brazil, for instance, gave up slavery extremely late. A lot of those slaves were working in the terrible chocolate plantations. So it did get to Spain and it was always a drink there and an elite drink produced with exactly the same processes that they were using in Mesoamerica to make this drink. It spread eventually to Italy, to France, to Germany, eventually got to England, even to Russia.

Eventually, the Spaniards took it even across the Pacific and took it to the Philippines where even today people are big chocolate drinkers at times like Christmas. So it spread and it often spread as a medicine, as many recreational drinks have. Every time you drink a G & T, a gin and tonic, the tonic is a medicine. It's quinine used against malaria and the

Coca Cola, which began as a cocaine-loaded medicine. They say it doesn't have it in today but I don't drink it. It had to pass--that's what's the coca is in Coca-Cola, it was cocaine.

They had to pass through a kind of a barrier to be accepted as a medicine. Everything that entered into Europe that the Europeans drank and ate in medieval times and the Renaissance had to fit into this insane scheme that was invented in classical Greece in Rome. Often associated with Galen, the physician to the Roman Emperors, and in this you had the body that was filled with these different fluids and they all had to be in balance. Blood, phlegm, black bile and yellow bile which all had directional associations, color associations, and then it had to be either hot or dry or wet or cold and fit into all of this very neat system. This is why people got bled all the time.

Right up until the invention of modern medicine, basically in the early nineteenth century, you were bled or you were given tremendous amount of medics or god knows what to balance you and what not. Well chocolate had to fit into this whole thing and the spices that were put in chocolate had to fit into this. So there was this elaborate thing and it was finally accepted and it wouldn't do you any harm but you had to watch out for the spices, they were too hot and chocolate itself was cold and all of these things balanced.

So had to go through that test, but there was another even more serious one and that was theological. Did it break the fast or not? Could good Catholics drink this before Mass, could they drink it during Lent? Was it a food or was it just a liquid, was it a drink? Loads and loads of literature on this subject was put out and all kinds of people—the Jesuits wanted it too be a drink because they were involved in the chocolate business by this time. The Franciscans were dead set against it because they were much more austere and eventually one very high-ranking bishop issued a long study and showed yes, it was really just a drink. It's okay, you can take it before Mass or during Lent and he was given a Cardinal's hat for his troubles.

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The Pope said, okay, go ahead and do it. So the way it was produced in Europe was exactly the same way the Mesoamericans had been doing it. And it came out to be a drink. There is this swizzle stick being used as you can see there in a Spanish tile representation on the right, as Diderot's mid-18<sup>th</sup> century dictionary, *Encyclopédie*, on the left. Heated, metates, the same kind of stuff. And it was a really strong, thick drink loaded with sugar of course by this time.

That's *La Belle Chocolatière* which is on your Baker's chocolate. The

Baker's Company is the longest lasting company in the United States. It goes back to the 18<sup>th</sup> century and *La Belle Chocolatière* by Liotard is the kind of logo for Baker's chocolate.

I have already talked about the slave trade involved in this. There, the famous three-way trade: cacao rum and sugar went back to the developed countries in Europe; they export down to West Africa. Firearms, cloth, salt, manufactured goods for slaves; the slaves are taken to the West Indies where the chocolate is grown and back it goes. Hundreds of thousands of unwilling Africans went that way, probably millions, and the cacao trade had a lot to do with it.

Eventually this turns into solid chocolate. In the early 19<sup>th</sup> century, everything changed. This guy, who on the left is Coenraad Johannes van Houten, who looks sort of like a spider-monkey here, but he was a very important guy for the chocolate industry, a kind of patron saint. He invented a method under pressure of taking the fat out of chocolate, the coco butter, and you were left with its residue that you could then turn either into cocoa, which is a very weak chocolate drink, or you could mold into bars or use them to coat chocolates, what they call *enrobing*, i.e. you had fillings inside of the chocolate confection.

And so it turns from now on into a solid food of the masses, especially in Great Britain--the great Quaker families like the Cadbury's, the Rowntree's, etc., who practically monopolized this and who developed methods to mass produce this stuff in the form of solid chocolate largely, although they did produce cocoa which was very, very popular in the British forces during the latter days of the British Empire. That's Bourneville outside of Birmingham which was a model city that the Cadbury's built. These Quakers were very, very religious people, and even today it's still a place where working conditions are absolutely marvelous.

In Switzerland, the Swiss got into this thing once Van Houten's invention was established and they developed methods of getting milk into chocolate in a big, big way. This is the origin of all the great Swiss families that produce this stuff: The Nestlé's, which is the largest food corporation in the world, began this way.

But the real guy, the genius of the whole business of commercializing solid chocolate was Mr. Hershey, Milton S. Hershey who again was a very religious benevolent man. Hershey, Pennsylvania was like Bourneville, was a model city with everything given by Mr. Hershey, he just wouldn't allow you vote that's all and even like unions at all, but it's still going strong and what not.

He developed mass production in a big way. He was a Henry Ford of the chocolate industry. He had his own milk herds; he had his own sugar plantations largely in Cuba--they are still running today by Castro--and he produced his own almonds. Everything he knew how to do and market in a big, big way. He is a very benevolent man, he established wonderful schools in Hershey, especially for orphan boys because he and Mrs. Hershey had no children and they loved kids. It's still going, get wonderful education.

But they began introducing this to the American public; everybody in America began to eat Hershey's chocolates. Mr. Mars got into it too at the same time. Bitter enemies always, they still are, the Hershey Corporation and the Mars Corporation. But they did things that no right-thinking Aztec Emperor would ever consider, which is to get chocolate and cook with it. I don't care what anybody says when you eat a mole, that's not pre-Columbian. The idea of using chocolate for cooking would be like using Communion wine for baking cakes, you just don't do a thing like that because it was a holy substance.

(00:45:06)

I won't even talk about this next one that's modern -- I don't know that Mr. Hershey would have approved of this either. Chocolate is everywhere! What the emperor Motecuhzoma would have sacrificed, Mr. Hershey, if he'd ever thought about this one.

Then the Belgians get into it and they start marketing chocolate as boutique stuff. Now you get into the boxes of chocolates, which are now said to be aphrodisiac, which is a total lie. There is nothing in the world that hasn't been called an aphrodisiac. I'd say buy Viagra, that's at least stuff that works.

But at any rate you get to marketing the stuff like jewelry and upping the price on these things enormously. Most chocolate today is not very good, that you get. Hershey's chocolate, I can guarantee you, is made mostly from chocolate from Africa which is the beans from Africa which are tremendous producers of cacao or cocoa. But the quality is not all that great. The best chocolate today is made by smaller chocolate makers who are using the best of varieties of theobroma cacao, mainly cirollo if you can get it. This stuff is loaded in Africa; that's where most chocolate comes from but it's not all that good.

Now, when you eat a chocolate bar--this is no exaggeration--when you eat a chocolate bar, I will mention Hershey's chocolate right away. Ned Boshell gave me a Hershey's chocolate bar just before this started and I noticed that he claims it's now pure dark chocolate, but he is

very careful not to tell you the percentage of what's in it, the Hershey Company.

In a chocolate bar like this, Cadbury's or any of the other ones up on the top here, most of this stuff isn't chocolate. The only real chocolate is less than 15% of cocoa solids. They have extracted the coco butter which is delicious. They have taken that out and sold it to the pharmaceutical and cosmetic companies because it melts at body temperature--very important in that industry. It sells for a lot of money. They substitute all kinds of cheap stuff like sugar and milk in there and vegetable fats.

[Audio Break 47:45 – 47:53]

Michael Coe: ...with a fine chocolate bar, with no less than 50% cocoa solids in it, that is, the real original stuff that comes out from grinding it up with sugar if you want it, you can get away with no sugar or very little and stabilizers and things of that sort that you need. But there's a big, big difference. Now today there is a whole movement in this country and especially in Europe among the great French chocolate makers in particular to produce really fine chocolate, the kind that would not disgrace let's say an Aztec or Maya drinking it.

This is for instance -- I have no stock in these companies, so don't worry about that. On the left is Valrhona which you can actually get -- I don't know if you have Trader Joe's in this part of the world, but you can get Valrhona chocolate bars in Trader Joe's. You can also get Scharffen Berger which is a very fine Californian company producing really quality chocolate, not junk chocolate. This one on the right is owned by the Redmond family and produced—a famous Oaxaca Archaeologist--which produces really fine chocolate in Venezuela.

If you go into a fine New York restaurant and you ask for the -- I want to talk to the pastry chef, "Where do you get your chocolate?" I can guarantee you, they are not getting it from Hershey, Pennsylvania or from Mr. Mars; they are getting Valrhona, Chocolates El Rey or some other really fine ones for that. Now this is quality stuff.

So that it. That's the true history of chocolate and there are many things to know about it, there is no end to this. I have got to do a new edition of my book as everybody keeps writing me new information. But it's been fun getting into this, I think this is my valedictory lecture on this subject and you have heard it, thank you.

I will say, I will boast about one thing: I did all the titles in this in Photoshop.

Now we have got five minutes before the festivities begin back here, the chocolate tasting and the book signing. I can, if you wish, I can answer questions while I am signing books; that might be the best way to do it because I am sure you have lots -- does anybody have any questions they want to ask to right now? Yes.

Audience Member: What is a white chocolate?

Michael Coe: Excellent question. What is white chocolate? White chocolate is not chocolate in the first place, by definition under the US Department of Agriculture rules. White chocolate is pure, the coco butter that comes out of the fat that's in chocolate. It's been extracted, then mixed with sugar and other things. It's delicious actually, it's really good but it's not -- it's got no -- none of the real chocolate in it, that is, it's a fat that was in the chocolate.

Cocoa butter is delicious. My mother used to lie out on the beach all the time when I was a little kid, used to smear cocoa butter all over and she smelled great, it's a wonderful smell. So there's always been a pro-cocoa butter--the really good chocolate manufacturers put a certain amount of cocoa butter back in their products to really make them good. But white chocolate is just the pure fats, the cocoa butter plus sugar added to it, I mean if it's pure. But it's good. Yes.

Audience Member: Does chocolate have a medicinal quality?

Michael Coe: Yes, that's a very good question also. Does chocolate have medicinal qualities? Now I have read all this stuff on the internet about it and I gave a chocolate talk up in Connecticut last year and there was a medical guy who was really interesting--I want him to do an appendix in my book—who got up to talk about that and answer that question and it is true that -- I am not talking about the junk chocolate, I am talking about real chocolate and the stuff that's 70%, 80% cocoa solids. There are antioxidants in that that are known to have very, very beneficial effects apparently on the heart and so forth. It really is good for your vascular system. I mean there's solid evidence for this.

Chocolate, the real chocolate is good for you, not the sugar in it, that's no good for you. But the chocolate is really good for you and I want to add an appendix on that in the book the next time. Whether it has aphrodisiac qualities or not--there's a lot of money staked on that you know -- that was invented by the Italians who produced -- well, *baci*, kisses.

[00:05:04]

They were the ones who first came up with that idea for Valentine's

Day, you know that's going to get everybody excited, romantic and even better and it does have -- what it does is produce pimples. That's where Mr. Hershey got the idea of making chocolate kisses versus that particular rumor.

Well, maybe we should -- yes one more please.

Audience Member: Do you agree with the reports that red wine and bitter chocolate or dark chocolate or coffee [Inaudible].

Michael Coe: Well red wine has antioxidants in it too -- I didn't quite get the whole question but I recommend --

Audience Member: Do wine -- dark chocolate or bitter chocolate with red wine as opposed to more chocolate?

Michael Coe: I would think combining a good wine with eating chocolate would be horrible. I remember I used to spend part of my boyhood in Cody, Wyoming and I remember I once had a terrible tooth problem that had to be fixed up by the local dentist and he told me that his idea of real recreation was to drink a good Scotch whiskey and eat chocolates at the same time.

Oh God! No wonder he is a dentist. I just don't think that sounds like a good idea. There's another question that I have never seen really answered; I see various ideas that chocolate is poisonous to pets, to dogs and cat and I saw something recently that says yes, it is, if it's really strong chocolate. I am sometimes asked that one. Why don't we quit here and then I will sign books for you back there and if Josh could come up here and unplug me, I will see you back there. Thank you.