DISCOVERY CHANNEL - HOW STUFF WORKS: CHOCOLATE WRITER/PRODUCER/DIREC	
TOR: ADRIAN MAHER ACT I	TEASE
ACT 1	From rich Hershey Barsto decadent
	trufflesto beautiful bon-bons, our
	world is koo-koo for coco. But
	there's more to this sweet
	confection than just the world's
	most popular flavor. Chocolate
	fueled the Aztec's lust for
	conquest, expanded the Spanish
	Empire, powered the Allies in World
	War II, introduced stimulants to the
	Western World, and today could save
	the rainforest! Everything you need
	to know is right here, now, on HOW
	STUFF WORKS.
	PRE-PRODUCED OPEN
	Chocolate is one of the most
	ancient, alluring, and richly
	complex foods on earth. More than
	1200 individual organic compounds
	have been identified in its makeup.
	BARRY GLAZIER: Research and Development Manager, Mars Chocolate: #24569 "There's really no way to simulate chocolate in the lab."
Yes!	Through the ages, it's been used by
	emperors for sex, workers for

		energy, and by soldiers marching off	
		to war. Billions of pounds of	
		chocolate products are consumed	
		every year all over the globe in	
		every conceivable shape, size and	
		seasoning. But beyond the massive	
		candy factories that endlessly churn	
		out this simply satisfying	
		concoction, what is chocolate and	
		where does it really come from?	
		TRANSITION	
	Factoid: The U.S. is	In the United States alone,	
	the third largest		
	processor of cocoa beans behind the	chocolate is a 13-billion-dollar-a-	
i	Netherlands and Ivory	year industry with each American	
ļ	coast.	consuming an average of 12 pounds of	
		the stuff a year. And to find its	
		origins, you have to head south	
		towards the equator.	
	SEGMENT TITLE # 1	CHOCOLATE GETS YOU DRUNK"	
		It's harvest season in Belize. Time to grab some big lush cacao pods and whip up some wine. But where's the chocolate? Well, this is chocolate! It's just that the Mayans in these parts made cocoa wine way before they turned chocolate into food.	Formatte
	Factoid: A typical worker can collect up	In the village of San Felipe,	
	to 500 cacao pods per hour.	subsistence farmer Juan Cho harvests	
	nour.	cacao pods off his four-acre farm	
		and makes some of the Mayan	
		moonshine with the help of his	

	mother Cyrila.
	JUAN CHO: Cacao farmer, # 24447 "You are about to see us turning this fruity pod into a cocoa wine, an incredible cocoa wine."
	The cacao trees on a typical
	plantation like Juan's thrive under
	the comforting shadow of taller
	trees.
	BETH KIMMERLE: Author: Chocolate: The Sweet History - #24545 "It's an under-story plant, so it needs what they call shade trees or mother trees and it essentially needs an environment that's much like a tropical rainforest.
	Juan and his workers harvest cacao
	by picking the fleshy pods right off
	the trees, placing them in bags then
	dumping them in piles.
Juan throws pod up in the air and cuts it in half with a machete. #24460	Sound-up: Machete splitting lush cacao pod.
Juan holds split pod right up into camera #24460.	JUAN CHO: #24460 "This is a beautiful pod, has a shell around it, the pod, there's a poppy fruity flavor on outer part as well as chocolate on the inside.
Factoid: There are about 30-40 cacao	Juan rips out the fleshy fruit pulp
beans in each pod.	and places it in buckets to ferment
	for 90 days. He performs the process
	year round, and already has a load
	of the stuff ready for the final
	stage.
	JUAN CHO: 24450 "If you look clearly inside it is white stuff bubbling that shows you that that

	fermentation turning it into wine is highly activated."
	Now it's time for a little sugar,
	stirred into the fizzing goo to add
	flavor and speed up the
	fermentation. Then Juan pours his
	custom-made jungle-juice through a
	screen to weed out the chunks of
	fruit.
	JUAN CHO: 24451 "It serves an important role in my tradition, my culture how it has been thousands of years ago, how it has been usedfor different occasionsbefore a harvesting season or the planting season.
	JUAN CHO: 24450 "After screening and sifting this wine we'll be drinking together in a communal ritual."
	JUAN AND CYRILLA CHO 24450 Note: They chant while lifting up a gourd of the cacao wine. (Also a backup version at 24451.)
	JUAN CHO: 24451 "I love cocoa wine"
	BETH KIMMERLE: 24545 "Chocolate wine can be pretty potent, you could get quite a buzz off of it."
Transition back to history	TIMELINE TRANSITION
V	Several thousand years ago, in the
	lush, tropical jungles of the
	northwest Amazon Basin, an
	enterprising native first noticed
	some of these odd pods hanging from
	a clump of trees.
	MARICEL PRESILLA- Author: The New Taste of Chocolate #24555 "The cocoa fruit is very unusual. It grows straight from the bark of the tree and it comes in many wonderful

colors and shapes.
Cracking open the crusty shells
revealed a first look at a whole
other interior world: Chocolate.
MARCY NORTON: Author: Sacred Gifts, Profane Pleasures, A History of Tobacco and Chocolate in the Atlantic World. #24546 "Inside those pods, there's a pulpy white mass and inside that there's little seeds and those are the cacao beans and it requires a particular environment, which is very humid and very hot."
The early gourmands were thought to
have first scraped and eaten the
fleshy white fruit and used the
beans for medicine. Eventually a
budding genius left chunks of fruit
pulp out in a bowl soon it was
time to party.
CLAY GORDON: Editor: www.thechocolatelife.com #24439 "One of the great things about cacao is that it ferments all by itselfjust let it sit in the sun for a couple of days and you've got cacao wine."
At some point, the lush cacao pods
in the Amazon began moving north,
carried by primates, rudely
transported by nature and carted by
humans blazing new trade routes over
land and by boat.
About 4,000 years ago, the first
, ,

traces of domesticated cacao begin
showing up in Mesoamerica, now
Central America.
MARICEL PRESILLA: #24557 "We know that as early as 1900 BC farming people, sedentary people from the Pacific Coast were already using cocoa in some fashion to make a beverage.
Archaeologists have discovered
ancient pottery shards with traces
of theobromine and caffeine, the
chemical signatures of cocoa. The
early drinking vessels had long,
skinny spouts thought to be perfect
for pouring cacao wine and filtering
out the pulp.
Centuries after its introduction,
cacao becomes widely domesticated in
the humid, lush lowlands of Juan's
ancestors in Mesoamerica and is
tightly woven into Mayan culture.
To the Maya, the fecund cacao pod
represents the wellspring of life,
resonant with energy and vitality.
MARK CHRISTIAN: The Cspot, #24550 "Cacao in some ways symbolizes sexual fertility, think about it, the pod is shaped and the way it hangs on the tree is like a breast and with its ridges and its smooth skin, some of them pigmented, those red creases, it suggests the vulva." But hey, let's hold off on the sex

	atuff for now Tuen dust wents his
	stuff for now. Juan just wants his wine-time.
	JUAN CHO: 24451 "It's something I
	love to consume myselfit something
	that I can make right off the trees"
	POD TO POD TRANSITION
	Soon after its introduction, cacao
	power begins spreading in
	Mesoamerica. The native cultures
	start drinking up its symbolism and
	meaning.
SEGMENT TITLE # 2	"CHOCOLATE INVENTS COUNTERFEITING"
	Okay, so we've sipped some cacao
	comp, as we see appear some control
	wine, but where's that darn
	chocolate bean? Juan and Cyrila know
	what you want. After being ripped
	from the cacao pod, the fleshy beans
	are placed in a fermentation box
	sealed with banana leaves for seven
	days.
Need stock footage of beans drying out on tarp under the sun.	JUAN CHO: 24451 "After the beans have been fermentedwe remove them from the fermentation box in the open sun to be dried, spread wide open.
	After a week in the sun, the
	chocolate beans are dry and ready
	for roasting for several hours on
	top of a komol, a rudimentary open
	oven.
Juan holds up	JUAN CHO: 24451 "After it has been
loosened bean up to	roasted both your index finger and
camera.	your thumb together twisting gently,
	you'll experience cracklings you
	getthe bean apart and the shells

	apart."
	Once the chocolate nibs are
	separated from the husk, they're
	sacrificed on a volcanic stone
	metate and ground with a rock
	roller. After an hour of elbow
	grease, the beans turn into a flaky
	powder, then a coarse paste and
	finally a pure chocolate liquid.
	JUAN CHO: 24452 "We'll be adding spices like all-spice, black pepper and cloves.
	Add a little hot water and sugar and
	soon, the ancient potion is ready to
	sip.
	(Cyrilla holds up gourd, chants and drinks. #24452)
	MARICEL PRESILLA: #24557 "The way of
	making chocolate among the
	Mayanstoday shows no change from
	the methods used by the classic
	Maya. Very simple procedures turn a
	very bitter seed into something
	amazingly delicious.
	Dut why and how did this unions and
	But why and how did this unique pod
	get domesticated in Mesoamerica?
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Factoid: The bean's scientific name in	get domesticated in Mesoamerica? CLAY GORDON: 24439 "Cacao is a tropical plant. It growsabout 20 degrees north and south of the equator. It's native to the
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	America. After eating the pulp and
	drinking its wine for centuries, the
	region's Maya finally stumbled onto
	the secret of the seed around 600
	BC.
	HOWARD SHAPIRO: Director of Plant Size and External Research - Mars Inc. #24561 "They take the seed and say 'I wonder what this is.'they thought maybe let's roast it and see if the flavor changes And wow, was it a flavor to savor!
	It had a taste and smell that was other-worldly.
Factoid: Today, the bean is referred to as "cacao" before processing and "cocoa" afterwards.	MARCY NORTON: #24546 "Research so far suggests that the beanwas being taken, driedfermented, crushed, ground, added with water and other ingredients and made into this wonderfully valued, delicious beverage known as chocolate."
	And it was a booster-shot with quite a bang.
	CLAY GORDON: 24439 "It's conjectured that the reason why they started working with the seeds in Mesoamerica is that there weren't the same access to stimulants in this part of the world and so they would have looked to the seeds as a source of stimulants.
	But what does all this have to do
	with counterfeiting? To understand,
	you've got to jump ahead a couple of
	thousand years.
	By the time the Aztec civilization
	took over most of Central America in
	the 14 th century, cacao had ascended

	to the divine.
	CLAY GORDON: #24439 "One of the things that happened between Mayan culture and Aztec culture is that in Mayan times pretty much anybody could consume cacao. But by the time the Aztecs got to it, it had assumed a much more important religious and social meaning to peoplethey literally placed consuming chocolate with connecting with their gods.
	And communing with the gods by
	drinking chocolate was reserved for
	the powerful - the emperor, the
	aristocracy, the priesthood, the
	warrior and merchant classes. It's
	commonly thought that the Aztec
	Emperor Montezuma consumed up to 50
	cups of chocolate a day before
	retiring to his harem.
	MARK CHRISTIAN: #24550 "There may have been 50 goblets, but those goblets would have been shared by the whole court, I mean otherwiseif Montezuma himself is drinking 50 goblets he's not spending time in bed, he's in the bathroom."
	Chocolate and blood were also seen
	as symbolically connected,
	bequeathed by Gods as a source of
	vitality and power.
(Note: XXXX means there is no spelling in transcript for the word spoken.) Factoid: The Aztecs	MARCY NORTON: #24547 "Cacao and blood had a verytight relationship, the cacao pod was envisioned as a kind of heart. Chocolate was made to be red with the addition of achiote and XXXXX and the effects on the body were

often sweetened their chocolate beverage with honey.	seen as a kind of blood-like forceSome believe that chocolate and blood were combined together andthat wasa beverage that was consumed.
	But what the Gods giveth, the Gods
	taketh away. And for the Aztecs,
	supplying their deities with
	reciprocal offerings of blood and
	chocolate was a way to maintain a
	natural balance and order. The two
	were powerfully intertwined during
	the ritual of human sacrifice.
	MARK CHRISTIAN: 24550 "They would use cacao right prior to the sacrifice to embolden himdrink it as much as he could. He'd be feeling strong. Then they take him up the stairs of the pyramidthey whip out
	an obsidian bladesever the heart, pull it out and just stick it up on a brasher.
	an obsidian bladesever the heart, pull it out and just stick it up on
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	an obsidian bladesever the heart, pull it out and just stick it up on a brasher. But the Aztecs faced a cocoa conundrum. There ain't none in the cold, dry highlands of Central Mexico where they were based. BETH KIMMERLE: #24545 "The Aztecs could not grow cacaoit grew in hot tropical regionsand it fueled their lust for conquests getting more of this cacaoit was sort of the oil of its time and it really propelled these military expansions as a result.
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	soon used as money throughout
	soon used as money chroughout
	Mesoamerica.
Factoid: A prostitute	MARCY NORTON: 24547 "Cacao was a
could cost 50 beans	very useful currency because it
and a slave or a	preserves well, it's very portable
turkey 100 beans.	and it's very valuable."
	BETH KIMMERLE: 24545 "They were kept
	in store houses or vaults much like
	a banka worker was paid in cocoa
	beansthey were used for goods and
	servicesan avocado or an egg, the
	value of those were two or three
	cocoa beans, whereas a rabbit might
	be worthtencocoa beans.
	CLAY GORDON: 24440 "With cacao,
	money literally grows on trees." And right behind those valuable
	And right benind those valuable
	beans came the counterfeiters.
	beams came one counterferens.
	BETH KIMMERLE: 24545 "Some folks
	that didn't have access to beans
	would forge beans and they would
	make little beans out of clay or
	fill up beans with dirt."
	MARICEL PRESILLA: 24558
	"Archaeologists have found clay cacao beans in tombs."
	Counterfeiters, and even commoners
	counterferens, and even commoners
	caught consuming the real stuff -
	well, let's say their future didn't
	look too bright.
	CLAY GORDON: 24440 "You broke a
	lawyou were sacrificed."
	Cacao was the nervous system of
	Aztec civilization, its stratified
	rules and tentacles spreading into
	every level of society.
	MARCY NORTON: 24547 "It's hard to
	exaggerate the importance of
	chocolate in Aztec culture. It
	linked together ideas about Gods,
1	about interactions between people,

	the economy, it was a motive for military conquest. It was seen as one of the most delightful experiences that one could have. It was given as an award to successful warriors. Later, a band of pirates in the Caribbean save chocolate and the sweetmeat starts socialism in
	Europe.
END ACT I	But coming up next, strangers arrive
	in the New World and change
	chocolate forever.
ACT II	For thousands of years, the art and
	craft of consuming chocolate was
	only known in the Americas. But
	then, some Spaniards showed up.
SEGMENT TITLE	"CHOCOLATE CONTRIBUTES TO RISE AND FALL OF SPANISH EMPIRE."
	Today, America is a huge player in
	the world of cocoa beans - the
	globe's largest consumer and its
	third biggest processor. To
	understand its reach, let's take a
	gander at the cacao tanker
	deliveries at the South Jersey Port
	in Camden, New Jersey.
Factoid: Each sling	Shipments usually arrive in 8,000-
of 25 bags weighs about 1 ¼ tons.	ton batches from Africa and
	Indonesia. The deliveries come in

	pre-slung units of 25 bags per
	diaper that are fork-lifted on to
	waiting trucks and unloaded at two
	local warehouses.
Factoid: Roughly 43% of the world's annual production of cacao comes from Ivory Coast. An estimated 90% of that country's crop is picked by children. Factoid: Each bag weighs about 150	JEFF WHEELER: Partner: Camden International Commodities Terminal #24529 "We're dedicated to the coco trade because it's such a high maintenance commodity to deal with, it doesn't allow for much attention to anything else. The bags kind of have a life of their own and there's quite a demand from the industryit's twenty-four-seven. Today the process is lots easier on
pounds and carries about 60,000 cacao	the lumbar - it's completely
beans.	mechanized allowing 24 workers to
	unload and deliver more than 100
	tons or about 1500 bags an hour into
	waiting warehouses. Within three
	days, the boat's whole 8,000-ton
	shipment is in storage.
	At Jeff Wheeler's 400,000 square
	foot facility in the nearby town of
	XXXXX, he's currently holding about
	15,000 tons of cacao that's worth
	roughly \$50 million dollars.
Factoid: The United States is the largest consumer of cocoa beans -750,000 tons per year. Germany is second with 317,000 tons.	JEFF WHEELER: #24529 "Camden International handles about half of the U.S. imports of coco beans for processing I would say there's a good chance that any chocolate bar that someone picks up off the store has probably come through as a cocoa
History Transition	bean through our facilities. But it wasn't always so. The Spanish

_ 1 21 2 2 2 2
Empire discovered cacao in the New World and once had a complete
monopoly on this coveted crop.
In 1502, Christopher Columbus was on
his fourth and last voyage to the
New World. Off the coast of current-
day Honduras, a canoe of Mayans
approached his ship offering a
tribute of cacao beans. But in the
hand-off, they spilt the beans.
MARK CHRISTIAN: 24551 "His son Ferdinand writes in his diary a couple of these guys fell into the water scrambling to pick up these beans these things that he describes as almond shaped as if he writes, 'Their own eyes fell out.'" Columbus' first cacao contact was a bust. MARK CHRISTIAN: 24551 "Truth be told, he missed the boat in terms of the value of those beans because he
didn't know what they were, he really didn't recognize them."
But in 1519, a far savvier and more
brutal Spanish conquistador, Hernan
Cortes, arrived in Mesoamerica
hungering for precious resources.
MARK CHRISTIAN: 24551 "When Cortes conquered Mexico he was the ultimate G unitthat's God, guns and gold, pretty much in reverse order when you think about it. Cortes said'That we Spaniards suffer from a disease that only gold can cure'".
And though the Aztecs had lots of gold, cacao was what counted.
gora, cacao was what counteed.

	HOWARD SHAPIRO 24561 "The value of the bean was so great that when Cortes showed up in what is now Mexico City and saidwe want your gold they were so surprised by that because anybody could have gold; but only the Emperor Montezuma could have cocoa beans. So he offered him the six cargoes, big storage rooms of cocoa beans, and they didn't see any point to that.
	Following the Spanish conquest of Mexico, there was an influx of
	Jesuit priests, who picked up on the
	bean's bonanza. They soon become the
	prime conveyors of this mysterious
	new nectar.
	MARK CHRISTIAN: 24551 "They're going there to convert souls no doubt, but the Jesuits are very practically minded,want currencies that can fund their activities, but beyond that they're also scholars, they are botanists and juriststhey start investigating cacao for its medicinal benefits.
	Soon cacao is flowing back to Spain
	amid a tight network of monasteries.
	It's also adopted as a favorite
	confection by the Spanish court and
	elevated to an elite status once
	again.
	MARICEL PRESILLA: 24558 We have information that cocoa was often kept at the Royal Courtwith the jewels. It was not placed in the same location as the produce or other foodstuffs, but it was kept under lock and key with the jewels.
Factoid: Within 100 years of the Spanish	To control their new empire, the

conquest of the	Spaniards take over the cacao
Aztecs, Mesoamerica's	Spaniards cake over the cacao
population fell from 20 million to 1.6	tribute system already set up by the
million - mainly the result of European	Aztecs. But their harsh greed causes
diseases.	a collapse in the crop that is prone
	to blights.
	MARCY NORTON: 24548 "Because of epidemic disease in Meso-America and also over-production because of the tribute requirements, there's actually ecological disaster.
Factoid: African	As a consequence cacao production is
slaves were imported to work cacao and	transplanted to other areas of the
sugar plantations in the Americas because of the decimation of	Spanish Empire such as modern-day
the native	Venezuela, Cuba, the Dominican
populations from such European diseases as	Republic and the Philippines.
smallpox.	Initially cacao taxes paid to Spain
	strengthen the Empire. But as its
	production disperses, the faraway
	colonies start trading with each
	other and then directly with other
	countries in Europe.
	HOWARD SHAPIRO: 24562 "This starts to change the value of the Spanish Empire's annual income. All of a sudden those taxes aren't coming. Also the goods aren't coming in. It's one thing to pay a tax, it's another thing to have the goods come in too.
	Though the Spanish control the
	secret of chocolate for a century,
	by the 1600's the beans have been
	scattered. Other European colonial

	powers move in and set up
	plantations in the Caribbean.
	BETH KIMMERLE: 24545 "When Spain loses their monopoly on cacao, they
	essentially lose their empire and
	these two things coincide with one another and they happen
	concurrentlySpain losing cacao is
	Spain losing controlLosing cacao
	is a symbol of the fall of the
	Spanish Empire. In the mid-1600s chocolate houses
	start popping up in such European
	cities as London and Amsterdam.
Factoid: Dark	MARCY NORTON: 24549 "What many
chocolate has the highest concentration	people don't realize is that chocolate was the first stimulant
of antioxidants than	beverage consumed in Europe before
any other food source	coffee and tea and I think there's
including green tea, fruits and	some suggestive evidence that chocolate was a gateway drug for
vegetables.	those other beverages"
	_
Transition to present day.	Currently, many of the ancient cacao
	plantations in Central America are
	being rejuvenated with the
	increasing demand for specialty,
	organic chocolate. The Toledo Cacao
	Growing Association in Punta Gorda,
	Belize, collects cacao from more
	than 1100 farmers that produce a
	nice hill of beans - more than
	100,000 pounds annually.
	ARMENDO CHOCO: Manager- Toledo Cacao
	Growers Association #24458 "Farmers have realized now that as part of my
	subsistence farming there's one crop
	that I can depend on that will

	continuously generate income for me
Factoid: More than	and that crop is cacao. The T.C.G.A is a cooperative that
3.5 million tons of cacao beans are	lobbies for better prices, improved
produced each year	
around the world.	transportation and more equipment
	for the growers. Several times a
	week, up comes the public bus and
	out jump the farmers to drop off
	their 150-pound bags, each filled
	with about 60,000 beans. Every bag
	fetches about 160 U.S. dollars.
	Managers give the beans a quick
	visual and smell test for levels of
	fermentation, dryness and lack of
	mold.
	ARMENDO CHOCO 24458 "First we probe it with a moisture meter and if it reads between four to seven point five in moisture it's acceptablethen we take a random sampleby taking twenty beansout of a bag, split them open on a piece of boardwe look at the coloryou can tell the fermentation by the color of the beans and once it's acceptable by the inspector, then we proceed in weighing the beans.
	Once the pounds are tallied, the
	farmer gets his pay, and the bags
	stacked up in the warehouse. The
	TCGA does three separate shipments a
	year to chocolate manufacturers in
	Europe in allotments of roughly

	35,000 pounds.
	ARMENDO CHOCO 24458 "Now when I go into the farm farmers have harvesting knivesrather thanclimbing the tree, now they can use a stick to harvest their cocoa beansI see improved fermentation boxes. These are investments that the farmers are doing in order to produce cacao.
	POD TO POD TRANSITION
	It's a sunny future for the Belize
	cacao trade. But near this former
	British Caribbean colony, many once
	reveled in chocolate's dark side.
	MARK CHRISTIAN: 24552 "How about Calico Jack?"
	A bunch of cutthroats once roamed
	these waters on the lookout for pay
	and prey.
SEGMENT TITLE	"PIRATES OF THE CARIBBEAN SAVE CHOCOLATE.
	By the late 1500s, Spain is shipping
	large resources from the New World
	back to the Old World via the
	Caribbean. Soon swarms of British
	buccaneers like Sir Francis Drake
	descend on the region hunting for
	bounty.
	MARCY NORTON: 24549 "There's a famous account of British pirates being extremely disappointed when they capture a vessel laden with cacao and to them it looked like sheep poop and so throwing it overboard. But by the early 1600s, as chocolate

spreads throughout Europe's royal
courts as a luxurious tonic, cacao's
secret is cracked. Caribbean
brigands are now on the lookout for
the loot. And there was lots of it.
Spanish treasure ships, fifty at a
time, laden with gold, silver and
cacao, heading back to Europe.
MARK CHRISTIAN: 24552 "These are just huge sitting ducks on the water ripe for the opportunity to be taken down.
HOWARD SHAPIRO: 24562 "It was money floating on the ocean."
MARK CHRISTIAN: 24552 "The motives of the first pirates, it's the lifestyleyou're working hardon the regular shifts of the crownyou can make in one take down what you can in the whole year as a regular sailor."
Assisted by pirate seizures and
trading, large cacao plantations
start thriving in the British
colonies of Trinidad, Barbados and
Jamaica. But in Mexico, the cacao
crop is collapsing from fungal
diseases.
MARK CHRISTIAN: 24552 "The pirates who were trading back and forth around the Caribbean brought certain strains back into the mainland to rejuvenate those grovesso in a sense, who knows, could very well be that the pirates of the Caribbean saved cacao on the mainland. Coming up chocolate creates

	socialism.
END ACT II	And thenchocolate goes to war and
	also transforms Hollywood.
ACT III	Who do we have to thank for
	universal education, health care,
	humane working hours and pensions?
	Franklin Roosevelt? The Swedes?
	Nope. Chocolate. In 1909, cocoa
	industrialist Milton Hershey built
	"Hershey-town" in Pennsylvania.
	Besides a gleaming production
	facility, he provided his candy
	workers with housing, stores,
	libraries, a hospital and even a
	zoo. Today, his factory churns out
	more than two million Hershey Bars
	and 25 million Hershey Kisses daily.
	But this deeply religious Mennonite
	wasn't the first to produce cocoa
	with some heart.
SEGMENT TITLE	"CHOCOLATE INVENTS MODERN
	SOCIALISM." In the early 1800s, a group of
	Quakers in England saw a perfect
	business opportunity. Their
	religious beliefs forbid them from
	any commercial activities involving

banking, slavery or alcohol.
banking, slavely of alcohol.
MARK CHRISTIAN: 24552 "Chocolate is ideal for Quakers because hey if you don't drink and you don't smokeyou're not gonna get into a distillery and you're not gonna open
up an ammunitions depot, what can you do? Joining a rock band is probably a century away in England, but you can make chocolate. BETH KIMMERLE: 24543 "Quaker
chocolate was built by gentlemen who were concerned about social values as well as business, they wanted to make a difference in the world in keeping with their religion
Quaker families such as Fry, Cadbury and Rowntree soon became leading makers of chocolate beverages.
BETH KIMMERLE: 24543 "Chocolate was a healthful drink, it kept people away from alcoholic beveragesit kept people healthy, it kept their workers strong and working in great conditions.
In the 1830s, Richard Cadbury
created his first cocoa factory in the town of Bournville, outside
Birmingham. It was a company town, a
social utopia set in a rural
environment. In other words, a
chocolate Camelot.
BETH KIMMERLE: 24543 "To him it was a model town, it had no bars, it had reading rooms, libraries, parks, quaint little houses and a place for his employees to feel safe and good."
CLAY GORDON: 24441 "They also took very, very good care of their workers, to some extent almost being the foundation of many precepts of the modern labor movementthe legacy of the Quakers lives on today. You can do well, make a

T
profit and do good at the same time."
Presently, Mast Brothers Chocolate
in Brooklyn channels the spirit of
the Quakers through their social
practices and artisan-like products.
Hey, they even look the part.
RICK MAST: Co-Owner - Mast Brothers
Chocolate, #24536 "We often look
back to thesimplicity of the way
that they workedthat goes from
sourcing the beans to handcrafting
everything to hand-wrapping every
bar, to treating our staff, our
community with the respectthat was
important to them and is important
to us now."
The brothers Rick and Michael Mast
are a handy couple. They make or
custom-order their own equipment,
including the roasting ovens, the
mixers and the molding machine.
Since their start in 2008, the
company has already topped one
million dollars in sales of their
fine, dark chocolate.
STEPHANIE AULT: Chocolate Maker -
Mast Brothers Chocolate: 24542 "What
I enjoy most about the manufacturing
process isthe beginning of the
bean, cutting it open from the bag
to the roasting to cracking it
and then to watching it go into the
conch and make beautiful melty
chocolate we do every step,
nobody is underneath or different
than anyone else, we all do the same
thing.
And the winds of change keep blowing
the brothers back into the 19 th
century. Soon they'll be sailing
their new boat to pick up the beans
themselves from all over the world.
CIICINDCIVCD LION GIT OVCI CHE WOLLG.
DICK MACT. #24537 WWo/re really
RICK MAST: #24537 "We're really
hoping that when somebody comes into
hoping that when somebody comes into our factory and buys one of our
hoping that when somebody comes into our factory and buys one of our chocolate bars thatthey're
hoping that when somebody comes into our factory and buys one of our chocolate bars thatthey're transported from this urban mess,
hoping that when somebody comes into our factory and buys one of our chocolate bars thatthey're transported from this urban mess, this chaos of New York City to these
hoping that when somebody comes into our factory and buys one of our chocolate bars thatthey're transported from this urban mess, this chaos of New York City to these farmsin Central South America,
hoping that when somebody comes into our factory and buys one of our chocolate bars thatthey're transported from this urban mess, this chaos of New York City to these farmsin Central South America, African, Madagascar // 24536 "you
hoping that when somebody comes into our factory and buys one of our chocolate bars thatthey're transported from this urban mess, this chaos of New York City to these farmsin Central South America,

	hear the beans being cracked."
History Transition	But back to the Quakers for a
	minute. They weren't just social
	mavericks. They were technical
	innovators and also jumped on the
	latest chocolate technologies of the
	time. In 1828, Dutchman Coenraad Van
	Houten got a patent for a hydraulic
	press that squeezed most of the
	cocoa butter out of the chocolate
	nib. That left a chocolate powder
	that could be more easily mixed with
	milk or water.
	MARK CHRISTIAN: 24552 "That was the same as splitting the atom in the chocolate world."
	BETH KIMMERLE: 24543 "What he developed opened up the world of drinking cocoa as we know it."
	MARK CHRISTIAN: 24552 "What it also does is it domesticates cacao and cocoa, it turns it into really kind of a kitchen thing, a female thing, a child thing."
	Soon after, Cadbury is marketing a
	captivating cocoa beverage. Then in
	1847, Quaker Joseph Fry launched
	another revolution. He invented a
	method of collecting all the extra
	extracted cocoa butter and then
	reintroducing it in larger
	quantities back into the cocoa

	powder. The resulting chocolate
	paste could then be molded into a
	solid.
Factoid: In 1879, the Swiss Nestle Company created milk chocolate by using evaporated milk in their chocolate bars.	MARK CHRISTIAN: 24552 "It's rough and it's gritty, but it's an identifiable chocolate bar and from that point forward the world's not the samechocolate no longer is just a beverage, chocolate now becomes the phenom we know as the chocolate barit can be eaten rather than drunk." CLAY GORDON: 24441 "Cocoa beans naturally contain about 50% fatbut by adding more cocoa butter into it you make something which has got a much richer mouth feel. It melts more easily and is much more pleasurable on the tongue."
	Chocolate had come a long way. A bittersweet beverage once reserved for royalty was now a hard bar available to the masses.
Factoid: Also in 1879, Swiss inventor, Rudolph Lindt invented "conching" a means of heating, mixing and rolling chocolate to refine it.	The innovation and high-tech legacy of the Quakers is evident today in the mass production of chocolate at the Mars factories in the United States. And it's quite a trip to go all the way from bean to bar.
	At the Mars' sub-contracted New Jersey warehouse, the stored beans are poured from the bags and shipped out in bulk around the clock, many of them to the Mars Factory in Elizabethtown, Pennsylvania. The 300,000 square foot factory produces

	thousands of tons of finished
	product per week. Millions of bite-
	size Dove Promises are spit out of
	this plant daily.
	GARY KROOT: Plant Manager - Mars Chocolate, #24564 "We're about to see that whole process from beginning to end."
Note: Also use	Containers and containers of cocoa
footage from New Jersey warehouse	beans arrive at the plant everyday
showing empty truck container with floorboards in action	from all over the world. The trucks
and moving.	use a "walking floor trailer" with
	mechanized floorboards that disgorge
	the beans through an open ground
	slat down on to the factory floor.
	After being cleaned, the beans are
	fed into four separate 20-foot high
	roasters.
	GARY KROOT: #24564 "The roasting process takes moisture out of the cocoa bean and it does make it easier to remove the shellit also develops the rich chocolaty flavor. Different winnowing machines suck up
	the bits according to size and
	discard the husks. The chocolate
	nibs are ground up in multi-ton
	milling machines that turn it into
	liquid.
Factoid: At least nine countries ship cacao beans to the Unites States	GARY KROOT: Plant Manager - Mars Chocolate, #24564 "Once we have chocolate liquor the next step is a mixing process. To make our Dove

including Haiti.	Dark Chocolate we would take a variety of chocolate liquors that we've made here in this plant. We'd mix it with sugarcocoa butter and other special flavorswe're making a ton of chocolate at a time and we make tens of tons of chocolate every single shift, three shifts a day. After mixing, the big bulky batch of chocolate liquid paste then gets
	shredded again in a machine called a
	five-roll refiner.
	GARY KROOT: #24564 "As it passes between rollersthe particle size has been reduced to such a fine texture that all the cocoa butter is actually reabsorbed back into the particles turning the chocolate from a liquid back into a solid.
	Mounds of solid particles are then
	dumped into dozens of enormous steel
	mixers called conches that stir the
	flaky chocolate for hours.
	Eventually 30 pounds of soy lecithin
	is added per 10,000 pounds of
	chocolate as a bonding agent. Extra
	cocoa butter and other flavors flood
	the mixers. The additives
	retransform the chocolate back into
	liquid that is then poured into
	molds.
	GARY KROOT: #24564 "We have to shake the mold and that makes the chocolate fill every part of the mold cavityit also allows any air that's in the chocolate to come out so that the chocolate is silky

	smooth.
	The molded chocolate goes through a
	refrigerated cooling tunnel for 20
	minutes and then they are ejected on
	to a conveyor belt. A high-speed
	machine wraps nearly 1,000 Dove
	Promises each minute.
	GARY KROOT: Plant Manager - Mars Chocolate, #24564 "The machines are so fast, it's hard to see with the naked eye."
	The wrapped Dove Promises are
	collected, slapped in bags and now
	ready for retailing.
	Just off the factory floor, a group
	of flavor fanatics monitors quality.
	BARRY GLAZIER: 24569 "We actually have onsite trained sensory panels and they're looking at everything from raw materials to end process material to finished products and what they're doing they're actually tasting things like chocolate liquor and they're looking for very specific flavorsto let us know if we've hit our targets.
	GARY KROOT: Plant Manager - Mars Chocolate, #24564 "We run 24 hours a day, seven days a week.
	Further ahead, chocolate transforms
	movies and television and saves the
	rainforest.
END ACT III	But next, chocolate wins World War
	II.
ACT IV	Guns, tanks, ammo - the typical

	I
	tools of battle. But you'll be
	stunned to see how chocolate was a
	critical weapon waged in World War
	II and during the Cold War.
SEGMENT TITLE	"CHOCOLATE BEATS NAZIS AND COMMIS!"
Start with contemporary	Each soldier in the U.S. military
soldiers marching/training	currently totes a 1,000 calorie
	chocolate bar in their wartime
	ration kit. One of Napoleon's
	favorite maxims was 'An army marches
	on its stomach.' And even from the
	time of the Aztecs, warriors with
	chocolate carried a huge advantage.
	CLAY GORDON: 24441 "Chocolate is one of nature's perfect foods. It's proteins, carbohydrates. It's got fat. It's a very dense source of calories. It's very nourishing.
	Chocolate also has chemicals that improve alertness and energy that help during firefights or sentry duty. It's size and portability is perfect for a soldier's battle needs.
	When America went to war in 1941,
	the Hershey Company contracted with
	the U.S. government to supply their
	chocolate bars in soldiers' survival
	D-ration kits. At the height of
	production during WWII, Hershey was
	producing more than 25 million
	chocolate bars a week for soldiers

overseas in extreme battle
conditions.
MARK CHRISTIAN: 24553 "Chocolate saves their lives in a more
sentimental way, this is basically a little feeling of the home front now, it reminds them of their
sweethearts, their sisters, their mothersnow they've got something to fight forbut on top of that
victory no longer had the smell of rotting flesh and gunpowder, victory
had the smell of chocolate."
CLAY GORDON: 24441 "Americans would come into towns they had just liberated from the Germans and hand out chocolate bars as gestures of
good will." By the end of the war, Hershey had
manufactured and shipped more than
three billion chocolate bars to the
U.S. military.
BETH KIMMERLE: 24543 "Hershey literally mobilized chocolate and sent it to war."
And hard to believe, chocolate
inadvertently created something
else. During the war, British
scientists developed the Magnatron,
a tube that produces high voltage
electricity used in radar
technology. In 1945, an engineer at
the Raytheon Corporation in New
Jersey was working with the machine
and noticed a bizarre effect.
MARK CHRISTIAN: # 24553 "One of their technicians, Percy Lebaron

Spencer, one day he's playing around with this and he notices that this bar of chocolate in his pants, he basically wet his pants with chocolate, man. Thing melted out. What did he discover inadvertently?
Spencer's proximity to the
Magnatron's radar had quickly turned
his chocolate bar into mush. The
incident leads to the invention of
high-intensity cooking in a metal
box blasted with high-frequency
electricity - the microwave oven. In
1971, only about 1% of the U.S.
population owned a microwave oven.
Today, more than 90% of households
have one.
But chocolate didn't stop after
beating the Nazis. It went on to
face down America's other great
enemy the red menace!!!! In June
1948, Soviet dictator Joseph Stalin
blockades West Berlin, the first
international crises of the Cold
War. The Allies respond with the
Berlin Airlift, moving more than
4,000 tons of food and fuel a day to
the besieged city. The Berliners are
kept alive but morale is low.
MARK CHRISTIAN: # 24553 "Gail

Halverson isa Colonel in the United States Air Force and he's flying theseC-54sthey're these planes that you can open up your hatch and you can just make a dropAnd one day he sees these kids on the edge of the tarmac and he uses his handkerchief as a parachute to start dropping chocolate bars down on them.
Soon kids are running up to him on
the tarmac asking for more
chocolate. But with a plane landing
every 90 seconds, they want to know
how they can recognize the Colonel's
plane.
MARK CHRISTIAN: # 24553 "He says 'I'll tell you what, you'll know it's me because I'll wiggle my wings. I'll rock them back and forththat crowd of kids gets bigger and bigger and so they end up calling him Uncle Wiggly Wings. So what we have is Uncle Wiggly Wings versus Uncle JoeDown goes the dictator. Score one for the Candy Bomber."
BETH KIMMERLE: 24543 "Here you have all these people that have been through a war and they're starving and all of a sudden chocolate bars are raining from the sky. I mean that to me just seems like it would have been magical."
After 10 months, 200,000 flights and
13 million tons of supplies
including three tons of candy
delivered by the Allies, Joseph
Stalin called off the blockade. His
ploy hadn't worked. And Berliners

kept eating Hershey's Chocolate.
BETH KIMMERLE: 24543 "When folks
were introduced to Hershey Chocolate
via the Berlin Airlift they
understood the power of America and
they understood the possibilities in
America by tasting something sweet
and wonderfulthey understood
America was behind them"
Fast forward to the Gulf War in
1991. Now we're talking heat. Up to
120 degrees in battlefield
conditions. The U.S. military really
needed a chocolate bar that would
hold together. They approached Mars
who created the Mars Bar.
MARK CHRISTIAN: # 24553 "It was just a mega-energy, mega-calorie, mega-heat resistantit was tantamount to a chocolate bar on steroids." DEBORAH FENTON: Senior Research Scientist, Mars, Inc. #24565 "If you can incorporate moisture throughout the bar, what it does is it locks the sugar structures in the bar together then when it gets hot, the cocoa butter still melts but the
sugar helps maintain the shape of the bar// What I think is kind of interesting about the bar is we actually made them out at our factory in Henderson, Nevadaso we made a product for the desert in the desert, which I thought was kind of neat.
Next, a war between chocolate

	companies transforms the movie and
	companies cransforms the movie and
	television industries.
END ACT IV	Later, we'll show you how chocolate
	can save the rainforest.
ACT V	So what does chocolate possibly have
	to do with movies and television?
	Well, let's just say they all like a
	good story with suspense, comedy and
	conflict.
SEGMENT TITLE	CHOCOLATE WARS CREATE MOVIES AND TELEVISION.
Factoid: The first	For decades, in their early
Academy Award for "Best Picture" went	histories, Hershey and Mars had a
to the movie "Wings."	kind of friendly competition. Since
	the 1920's, Mars sourced much of its
	chocolate from Hershey. But each
	company avidly pushed their own
	brands, such as Milky Way, Snickers,
	and Hershey's Kisses that are still
	prominently advertised today.
	But in the early days of chocolate
	promotion the handy candy starts
	popping up in unique places. The
	first sighting of an identifiable,
	branded piece of chocolate in a
	movie was in a film called "Wings"

	T
	starring Gary Cooper and Buddy
	Rogers in 1927. And what's there,
	right at the beginning?
	MARK CHRISTIAN: # 24553 "It appears
	in the opening scene, Cooper hands Rogers, who's the hero of the movie,
	a Hersheys Bar. The fact that it's a
	silent film heightens the whole
	drama. Furthermore, Cooper ends up getting killed. Rogers survives.
	What does that tell you?
	BETH KIMMERLE: 24544 "That bar
	starts becoming iconic and if you
	can understand people are going to movies and they're seeing this bar
	and it really makes them want to run
	to the candy counter and go buy
	oneand this sort of in a way starts product placement."
	The sweet treat pops up again in the
	1933 movie "Dinner at Eight" where
	actress Jean Harlow feeds her vanity
	and loneliness with a box of
	chocolates. By the 1950s it becomes
	a plot point in television episodes.
	MARK CHRISTIAN: # 24553 "We have
	that classic episode with "I Luv Lucy" called "Job Switching" where
	Lucy and Ethel get jobs at an
	assembly line of chocolate and
	they're just stuffing their breasts
	and their mouths with it cause they can't keep upthat was filmed
	atSee's Candy in Los Angeles."
	And then there's that famous shower
	montage made by a famous British
	director.
	MARK CHRISTIAN: # 24553 "Hitchcock's
	Psycho, the shower scene where all that bloody mess was actually
	chocolate syrup. It kind of takes us

	back to the Mesoamericans and the original usage and ritual
	participation of chocolate and human sacrifice.
	All the hype seemed friendly enough
	and Mars and Hershey even helped
	each other in rough times. As the
	winds of war began blowing back in
	1937, Milton Hershey bought a
	massive amount of cacao beans as a
	hedge against dwindling future
	supplies for his factories.
	MARK CHRISTIAN: 24553 "People thought he was a sucker and a fool. Then comes World War II and he's sitting on all this cacao and cocoa, the raw material to make chocolate bars. No one else had it. It got so bad for Mars, for instance, they came to him for their cocoa.
	But by 1965 the chocolate plots
	start taking another turn. The Mars
	Company decides to halt their
	purchases of raw chocolate from
	Hershey, a practice that had gone on
	for decades. Within a few years,
	both companies beef up their
	advertising departments. Soon, the
	air war is on, employing some of the
	industry's most iconic phrases in
	television commercials and print
	ads.
Create montage of	BETH KIMMERLE: 24544 "Some of them

different ads back to back? (Assuming we can get rights? Or create animation?)	still stick with us today, I mean they're so memorable. 'Melts in your mouth not in your hands.' 'You got peanut butter in my chocolate.' 'The great American chocolate bar.' 'There's a smile in every Hershey Bar.''A Mars a day helps you work and play'This weave of advertising symbolizes the two companies going neck to neck, but really what it does is create this body of memorable advertising for chocolate in America. MARK CHRISTIAN: # 24553 "The air wars just take off from there. 'Now
	the sweetest things on earth may be from Mars' but'Hershey's is the All-American Chocolate Bar.''A Snickers a day, helps you with work, rest and play.' They go tit for tat, head to head on commercials."
	But the biggest chocolate marketing
	coup of all involves the movie E.T.
	in 1981. At the time, Stephen
	Spielberg approached Mars about
	using M&M's in his upcoming film.
	They blew him off.
	BETH KIMMERLE: 24544 "He moves on to Hershey and he asked for the iconic Hershey Kiss to be included and they said 'Well, you know, we're not so sure about a movie with an alien and our producthow about Reece's Pieces?
	A Hershey executive, Jack Dowd,
	flies out to Universal Studios to
	seal the deal and offers a million
	dollars to help promote the movie.
	In return he wants to know how his
	product will be used in the film.
	MARK CHRISTIAN: # 24553 "They give

	him nothing. They don't even give him a photo of this monster. He goes back to Hershey's thinking 'hey, all I know is I got some ugly little alien who's going to turn into what, some kind of intergalactic python and eat this nine-year old?He's able to persuade the rest of the management at Hershey's that he's got the right instincts to go with this project and so they sign on." In the movie, little Elliot lures ET into his bedroom by sprinkling
	Reece's Pieces along the carpet.
	MARK CHRISTIAN: # 24553 "All we do is see his fingers grab at the Reece'sput it in his mouth and then you hear this amplified cracking and crunching and at that point people are bolting from their seats going to the concession stand to get Reece's Pieces." Within two weeks of the movie's opening, sales of Reece's Pieces triple.
	cripic.
	BETH KIMMERLE: 24544 "One of the Hershey executivesclaimed that this was the biggest marketing coup in history and was worth something liketwenty million dollars of free advertising for the company.
	MARK CHRISTIAN: # 24553 "From that moment on, product placement in Hollywood and TV just goes bananas."
	BETH KIMMERLE: 24544 "In a really significant way, chocolate transforms movies and television."
END ACT V	Next up, chocolate is our best hope for rescuing the rainforest.
ACT IV	The rainforests are the lungs of our

	planet. They keep our atmosphere
	stable by moderating levels of
	carbon dioxide, a factor in global
	warming. But as clear-cutting of
	tropical trees continue, how can
	chocolate stop the destruction?
SEGMENT TITLE	CHOCOLATE CAN SAVE THE RAINFOREST.
	There's no question we're losing
	thousand of square miles of
	rainforest a year around the globe.
	MARK CHRISTIAN: 24554 "The rainforest is being encroached upon by several forces. Clearly the timber industry is in there and they're clear-cutting. Cacao, because it's an understory tree, gets crushed when the giants fall. A lot of that wood, you know what it's going for? Coffins up northOnce it's all cleared you get the cattle showing up. They're grazing for what? Steak dinners in LA or Tokyo. And once chopped down, the tropical soil where chocolate trees grow around the equator is fickle.
	HOWARD SHAPIRO: 24560 "This is not the beautiful Mississippi River Valley or the Great Plains of the Unites States or what's it's like in part of Ukraine where the soil is thirty feet, forty feet thick, this is shallow soil. This is the neo- tropics where it's being cut down
	and it loses its fertility very quickly. Without trees to anchor the soil, the thin fertile layer is easily

	new crops. But growing cacao can
	physically and economically bind the
	rainforest.
	MARICEL PRESILLA: 24560 "Where there is cocoa, there is lifeCocoa is a friend of other plants; coffee, yucca can grow under its shade. Cocoa itself is protected by tall trees. You have a community of plants working together allowing for animal life to thrive; for the proper insects that pollinate cocoa so it's a sound way of growing a plant with a wider ecology which is the rainforest.
Factoid: More than 10.5 billion dollars	The majority of the world's cacao
of cacao beans are	production is on four to five-acre
produced and sold annually.	family farms managed by more than
-	six million small subsistence
	SIX WITHOU SWAIT SUBSISCENCE
	farmers.
	And instead of giant, mechanized
	farms bulldozed into lines of
	massive mono-crops, the cacao
	plantations are richly diverse and
	sprinkled throughout the rainforest.
	CLAY GORDON: 24445 "Theygrow a wide variety of crops to add value to the land rather than toslash and burn and grow only a single crop which they can sell only to market. In this way they can support themselves in part from the land. They might be growing rice and beans and cornas well as some vegetables. And they're eating what they canor trading the rest off to other familiesthat way they can create a very stable economy. But what do these small farms look

	like, how are they managed and can
	,
	they really protect the rainforest?
Clay Gordon at Eladio Pop's	CLAY GORDON: 24445 "This is where
farm.	chocolate begins. We're standing in
	the middle of a cacao farm it
	doesn't look anything likethe
	American conception of a family farm
	cause the trees aren't planted in
	rows. And in some respects what the
	farmer is doing is he's foraging. He's going through the forest
	looking at the trees and saying
	what's ripe today."
	The farmer also clears the
	underbrush with his machete and cuts
	off the branches, called 'chupons'
	that don't grow cacao pods.
	CLAY GORDON: 24445 "That kind of
	maintenanceis an important part of
	organic cocoa farming."
	JUAN CHO: 24459 "One of the most
	important things to my farm is I'm
	always cutting and pruning the other
	plants that are strangling my trees
	and my crops. CLAY GORDON: 24445 "You leave all
	the cuttings from the machete on the
	forest flooryou want them to
	decompose and turn into organic
	fertilizer if you cleaned it up,
	you'd actually have to resort to
	expensive chemical fertilizers.
	The composting heaps of discarded
	cuttings create perfect patches for
	future cacao trees.
	JUAN CHO: 24459 "On my farmI
	constantly keep on planting more
	cacao trees, as you can see this baby plant has just been planted and
	I want to plant it right next to an
	older tree which is providing shade
	to this baby cacao plant.
	In some ways, cacao is the diva of
	the plant worlda gorgeous, lush,
	multi-hued pod that needs constant

attention but is vulnerable to
fungal diseases.
CLAY GORDON: 24442 "One of the ironies of cacao isit likes a humid environment. But humid environments are breeding grounds for diseasesYou can literally have one pod that gets infected, frost pod rot or black pod rotyou can actually infect an entire farm."
HOWARD SHAPIRO: 24561 "In the late 1980s in Brazilone disease, witches broom, wiped out theproduction in the country. This
was the second largest producer in the worldIn less than 24 months the production went from 400,000 metric tons to less than 80,000 metric tons which I would call a complete collapse.
To protect against disease
outbreaks, farmers use grafting procedures to grow a hardier crop.
BETH KIMMERLE: 24544 "What you can do is take a strain of cacao that's disease resistantroot stockand merge it with a strain of cacao that's incredibly productiveand you get a hardier, better cacao.
Farmers consistently cut holes in
branches of a strong cacao tree and
insert an opposing strain of cacao
seedling into it. For Juan, so far,
so good, no signs of disease in the
last few years.
Cacao also needs just the right
amount of shade mixed with sunlight.
Each farmer must monitor the

rainforcet canony and cut away the
rainforest canopy and cut away the
precise amount of foliage.
JUAN CHO: 24460 "The cacao tree needs 75 percent of shade and twenty-five percent of sunlightin order to flourish."
So what is it about chocolate that
ignites such passion?
MARK CHRISTIAN: 24554 "It's by far the greatest ambassador that not only the rainforest has, but in a sense the earth has. I mean you see the bumper stickers - 'Save the earth, it's the only planet with chocolate.' Humans have a relationship with chocolate. We don't have it with oilNobody goes crazy over corncobsWith chocolatewe have sonnets and poems written. CLAY GORDON: 24445 "One of the great things about working with chocolate is that itnot only has this religious significance and this historical significance, but it tastes good It's got these brain
chemicals It makes people happy. BETH KIMMERLE: 24544 "The new movement in chocolate is really back to the futurefarmers moving away from pesticides and machinerymore interesting flavorsletting consumers know where the beans are coming fromdoing it in a way that is sort of ancient and honoring traditional methodsandchocolate can save the rainforest.
So do we agree that chocolate is
more than just a hunky chunk of junk
wrapped in tin foil? It's gotten us
drunk, pumped us up with stimulants,
started the human rights movement,
beaten Commies and Nazis and made

	some great movies and television.
	And it may just someday save the
	earth. So chew on that when you take
	your next bite!
END ACT VI	