Elizabeth: A talk by Dr. Mark Howell at the Frederick County Historical Society on September 8, 1998. The title is “Forging a Partnership: The Iron Industry in Frederick and Washington Counties”.

MH: Um, I was starting to compare this lecture um it’s uh pretty straight forward, I was going to go in chronological order from 1800-1850 and the closer we got to the date the more I realized I didn’t have a lecture I had a day or two seminar. So there’s going to be holes tonight, and for that I apologize, and the holes are there intentionally because I just couldn’t cover all of the material.

Anyway, to start out. I have a couple of questions of you and I hope we have some real antiquarians or historians or something here tonight but uh this is-this is uh iron it’s why I’m holding it with two hands and not one hand. Can everyone see that? Can anyone tell me what it is or how it functions? No, no takers? Did you wanna guess, was your hand-oh okay. This is like an auction if-if you move you’re in. Okay, this is, as I understand, a wagon ski. Alright? You ran the wheel of the wagon into this part down here, you tied this to your wagon wheel, you locked the brake on the wagon wheel and then what you had was, was basically had a ski that would go over frozen ground or ice or whatever, the same as a stone boat on a farm. It came from my-my grandfather’s farm, was not cast here uh, I doubt that anything like this was cast here. Uh and uh the reason why I brought it in not because I wanted to show you an artifact wha-but rather because tonight I’m gonna talk about only a few artifacts but for the time period we can only imagine what kind of artifacts were cast of iron in those days and how important and how dependent people were on their iron artifacts. We can’t hardly guess at this point. Okay second question: If I were to say, “Ma heat the spider!” Could anybody tell me what I just said? [indecipherable answer]

MH: I'm sorry?

[repeated indecipherable answer]

MH: Oh you knew it right away!

Elizabeth: ...something with heat-

MH: You're smart. Could you tell me more about? Th-the the, let me repeat it. The lady said-

Elizabeth: [indecipherable]

MH: That's right, the lady said, "Heat the frying pan."

[indecipherable explanation]

MH: That's right, sure. The-the spider was a fry pan that in colonial times was a vessel, may not have been a perfectly flat bottom, it had three legs and was made of iron, cast-iron, and had a long handle. And as cooking facilities became uh more refined the handle shrunk the legs shrunk and even into the twentieth century, there are people or were people in isolated areas who returned-who-who referred to iron skillets as spiders. Okay? Spiders. Okay, third question. To what does pig iron refer? Can somebody tell me pig-in-in-in you already know I'm not gonna, I'll accept you last but I won't accept you first, cause I know you know. Can anybody tell me a definition of pig iron? What? Christian, my son, my old son tell me what pig iron is.

Christian: Pig iron is where they make iron [indecipherable].

MH: Yeah, this is what happens when you're interested in iron and you go to iron furnaces around the area and you drag your kids along, they soak up all this stuff for better or for worse. Yes it refers to the the form of iron.

[Elizabeth and Dr. Howell speak over one another-indecipherable]

MH: -Probably don't even care about iron, I'd like to make a couple of quick comments about the iron industry in Maryland. I think if you were to think about the iron industry in Maryland,

the state of Maryland would probably not be one of those states that would immediately jump to mind. Probably Pennsylvania would and rightly so. Uh in early colonial times the iron industry was a seaborn industry and it was in Maryland-in isolated situations not unlike in Pennsylvania, Delaware, Massachusetts, New York. And at that point then in time those iron furnaces were very very similar. But as time went on due to the uh coal and other other resources, excuse me, the iron industry changed and Pennsylvania became the predominant uh historical building of the iron industry. Maryland, however, was kinda at the edge of that and they are-there are some interesting pieces to that whole history that occurred in Maryland. Two of them are right here in Frederick and Washington counties. One of them is Catoctin Furnace and the other one is Antietam Fire Works, which is over at the mouth of Antietam Creek, the mouth of Antietam Creek in the Potomac River.

Unknown Speaker: Mark could I uh have the uh [indecipherable]

MH: I could dim the lights a bit if that would help people to see that, perhaps it's just too far away. Anybody? It's fine the way it is. Okay, what we have here is a diagram of an iron furnace it is a charcoal furnace and we're just pointing out pieces-this is the stack, the power source (the water wheel), [indecipherable] just like when you're blowing on a fire when you're camping same idea. [indecipherable] recharging the furnace with raw materials, this individual here is reconnecting the slag that floats on the top of the iron, this one is [indecipherable] If I were to, of all the pictures I've looked at, this is one I think is the most demonstrative of how Catoctin Furnace and the furnace at Antietam Fire Works probably looked in the era that we're speaking here tonight, 1800-1850. Of course there were changes, I don't mean to say that it never changed there were upgrades and etc. But that-that would be what I-I'd want to show.

Next few graphs please [indecipherable]. Yeah and just to-to recapture this, this again is the furnace staff uh [indecipherable] where they could recharge uh that-that's your-your iron furnace [indecipherable]. What you see today in terms of reconstructions seldom reproduces the iron furnaces mostly they reproduce the external view of the iron furnace because hardly anybody crawled inside anyway.

Okay, could we go to the next one. Okay this is your chemistry lesson for tonight. [someone must ask a question]

MH: it's iron smelting and as I just alluded to the raw materials for iron smelting are carbon, or a carbon source, iron ore and limestone. In the first box I have the chemical reactions for the carbon. And the carbon in this case as I just indicated was charcoal, was a charcoal furnace, later on it was coal or coke. Uh the air blast you saw the way the air was introduced to the to the furnace and the reaction then for this carbon dioxide and heat is when-my guess is when you burn charcoal you sure do get heat. The second line then shows some of the carbon dioxide re-reacting with more carbon, more heat and forming carbon monoxide, very important in iron smelting, very important. The reason I feel it is important to go through this is because iron smelting is not simply a matter of let's get it up heat and it'll all run out for us. Doesn't work that way, okay? This is a chemic-test tube, a giant test tube and it's a chemical reaction. The second box really tells us about that. The carbon monoxide, in gas form, goes up through the iron oxide which is a clean type, but it could be other thing, other kinds of iron, other complexes, all with oxygen I might add. And reduces the iron that is it makes the oxygen off and you get metallic iron. This metallic iron then because of the heat you've applied in the furnace then drips down to the bottom. Meanwhile the gas continues fade your charging mixer going to the top, now this is the furnace stack.

The third box then is limestone. Uh limestone, which we have an abundance of around here, plus the heat of a good furnace, burns the lime, creates more carbon dioxide which I might add recycles back into the other chemical formulas. You take the lime and it will react, it's called flux, it will react with sand, that Silicon Dioxide, SiO2. And sand is one those real common elements that hold the Earth together as well as iron oxide. And of course it produces slay of Calcium Sulfate. If you've ever walked around at an iron furnace you may see these funny rocks and some of them may have bubbles in them and rather non-descript brown or gray some of them though, the ones that I really like, are the ones that are a real pretty color, they're really slag glass is what they are. They might be green, they might be purple, they might be black. But if you walk around and all of a sudden you see this pretty little stone on the ground, that's a piece of slag. That's slag glass. And of course sand that's the-the raw material of glass, and that's what's happened.

Okay um let's move on from there. If we could go on to the next one there. Okay, the map of Maryland, or at least a part of Maryland. And I'd like to point out that the [indecipherable] 15 just south of Thurmont is Catoctin [indecipherable] up to uh up to the [indecipherable] you will find the other facility we are going to speak of. They were contemporaries. They shared common philosophy if not common ownership. In any case I'll try to link those together a little more. The next few graphs is a Frederick County view graph and you will see down here that uh you have, excuse me, right down here on Route 15, on 15, you come up right here [indecipherable] you can see that Catoctin Furnace is one of the remaining six [indecipherable] it's also called the Emmitsburg [indecipherable]

Elizabeth: Oh, it is on there.

MH: There were three [indecipherable] there was one just behind the furnace or the left of the furnace [indecipherable]. Another one was a half a mile south and that was behind Rocky MacFerson's house, which I presume they mean Auburn. And the other one was a mile-

Elizabeth: what trash?

MH: -a mile north of the Emmitsburg Way and I might-

[Elizabeth and Dr. Howell talk over one another]

MH: [indecipherable] and a couple hundred yards west of the Emmitsburg Way and I kinda guess that one is underneath [Elizabeth talks over him] but I could be wrong. I don't know the lay of the land that well to say that. That particular one was probably the most heavily mined of the three for ore. I might add the ore bank they were mined open pit and they are non-contiguous, that is to say they don't connect on the surface, they may connect some place on the ground, they don't connect on the surface. Okay, this is uh we'll start at the bottom and go to the top. Yeah, you can see Harper's Ferry on the bottom and the junction of the Shenandoah Rivers then I have a note that says "Maryland Ore Bank"-that's right here. Now, Maryland Heights is right here and this is Harper's Ferry next to Sharpesville [indecipherable] used both of the ore banks for iron production. This ore bank [indecipherable]. This is the Antietam Iron Works and that's the way it was spelled in 1840. Again, if you start at the Potomac River [indecipherable] if you go a couple hundred yards you may not realize you've been to the 1800 [indecipherable] this is the [indecipherable word] Creek bridge. This is the bridge that looks like the Burnside Bridge. It looks that way because [indecipherable]. Anyway, this is the [indecipherable word] Harper's Ferry road [indecipherable] if you were to drive up to this area and it's very narrow from there , you will see [indecipherable] that was the company store, the Antietam Iron Works. [indecipherable] and you will see right up against the [indecipherable] and I was told

recently that that was [indecipherable] but if you look over the bank you find stone walls [indecipherable] on each one and then you couldn't see it here. Now if you were to go see this,and I'll tell you, this could possibly be this side of the road [indecipherable] on the other side of the road, oddly enough, is Steel Park, then the C&O Canal [indecipherable].

Okay, can we just cut that a second and I'll just go to-uh I'll just go to this. Okay, oh yes it's up. Okay, um this should be clear to some folks here, probably more familiar to some than others. This is Catoctin Furnace as it's reconstructed today. Could-Should I cut the lights a little bit for this? [indecipherable] Better? Okay, okay you will notice we have they uh the furnace the stone furnace, the pyramid, so to speak in the casting. And how this will correlate to the diagrams I have over here, there's an [indecipherable] side over here that you can't see where they'd pull the pig iron, right down in here they had a-this may have well been a [indecipherable] arch [indecipherable]. It's kind of perjectual where you'd wanna place the water wheel that powered this, this air jet. Behind it, on the other side of it, [indecipherable] in any case [indecipherable]. And this a worker's cottage. Perhaps you've seen it when you've gone through there and wondered how some many people built some many cottages that all look alike? Well that was all part of the iron plantation and I introduce that word to you because that's an important concept. Iron furnaces sprung up where there was iron ore. That wasn't in cities generally. So what they had to do was, they had to build worker's cottages. They built a store, they built a whole world community and this is an example of part of that community, part of that plantation community. It was also called a plantation because they also very very frequently, had access to large woodlots, wood areas. When I saw large wood areas I mean probably the largest extent, that appeared over here at Catoctin Furnace was 7500 acres, they could log for-for charcoal. And at Antietam Iron Works at one time they had over 17000 acres, pretty good-pretty

good size piece of ground. This what you would see, as I referred to earlier, now probably most recently used as been as vine peeling [indecipherable]. This part is larger than the others, you see how it backs up to the foot likely a charging bridge was over that way, it must've been modified. If it look like I kind of crammed it in [indecipherable] the the foot there is very close to the road; you kind of have to a contortion to even take a picture. That is why I was say that was on private ground and I was standing right up on the edge of the road.

Elizabeth: [indecipherable]

MH: Okay, um let's we'll leave that one but let's go back to the overhead [indecipherable]. Uh let's do one more slide over this is a good one and then we'll go back, sorry. This is Cornwall Furnace. Cornwall Furnace is located in Lebanon County, Pennsylvania. It's sort was the premiere charcoal iron works in the United States circa 1830, possibly. It was owned by the premiere iron maker, William Robert Coleman and his brother and his family owned this. When I first drove up to this, and this is not a good picture of it, when I first drove up to it all I saw was this gothic structure and all I thought, " Why would they put a cathedral all they way out here?" Well they didn't. Inside that was the iron furnace and then these buildings back here is where they would store charcoal. Everything and the way that is was done was done in a way that was just indescribable Everything they did was to make this place look beautiful, just incredible. And by the way when a charcoal, when coal and coke replace charcoal, the coalmans were well enough off to shut this place down completely and go build the new technology, done deal. Okay, that was Cornwall Furnace. There was a connection, I don't show you this just for fun there was a connection.

Okay, let's see I'll go back. Okay, what did they really do at Antietam Iron Works and Catoctin Furnace, what did they make?

Elizabeth: [talks over Dr. Howell]

MH: Well as I said they probably didn't make these but they may have, it's hard to know because there's a lot evidence that someone came in and said, "Could you make me one these or could you make me one of those?" There's a lot of evidence that they could cast them. Okay? And those just didn't go down in the books much so if those books existed now, and they don't. In any case [indecipherable] the basis for all the iron products that were made there is from the pig iron at Antietam. Catoctin Furnace around 1810, 12, there is good evidence [indecipherable] and uh there is no evidence that that they were very critical to making cannons in 1812, neither Antietam Iron Works [indecipherable]. Antietam Iron Works has raw iron and raw iron is important that that is refined and the next step you take out some of the excess carbon and you ship to local forges and maybe to local [indecipherable]. And in order to do industrial castings they had pattern makers, they had people who could draw, they had-they had a whole family of skilled iron individuals that make one of a kind castings. [indecipherable] Harper's Ferry Iron Works build a new water wheel and between the spokes of the water wheel were cast iron-cast iron pieces to hold [indecipherable]. They went to the Antietam Iron Works to have those custom cast. That's the kind of thing that [indecipherable] for nails and the Antietam Iron Works then was the most well known for its nail production-it was a nail factory. And an early one, and I think used technology early on uh that was not innovative early on in the United States.

Let's wait a minute, yeah. This is the owner's house at Cornwall Furnace, pretty spectacular place that thing considering it was built I think in 1850 or something like that. Okay, oh yes! Let's go into this, some of you have seen this before-it's a ten plate stove. Okay? It's the-the uh the most successful household item in the 19th Century. This one can be seen on display at the Catoctin National Park for visitors. It was in fact gas and we can tell that by the picture that was

not green [indecipherable]. And it's called a ten plate stove because it was cast in ten plates [indecipherable-he may be explaining how the stove was made?] and the whole thing sort of fits together. Another-another view of it and you can see the name right on the side of it. That is a really cool artifact. I will point out to you though that its-its decoration is sort of simple. I'm guessing that it was probably one of the earlier varieties or at least one of the bottom-closer to the bottom line. It was probably made after 1820 or in the 1820s. This is one is one that has a little more style to it. You'll notice it has some cross braces here, some more decoration around here, this one too was cast at Catoctin Furnace. This one is in the collection, the DuPont collection in Whittier, Delaware. I'll show you the next. Okay, we all would say George Washington, a little more decoration on it. And Whittier because of this has said it was probably cast earlier than the 19th Century, but the fact that is has this name on it Catoctin Furnace associated on it would tell us assuredly it was after 1820 or 1840. But it was sorta top of the line and I think Washington's print on there means [indecipherable] rather than the time according to a colonial time.

Okay, if I could have the next few graphs please. Oh one thing I forgot to do and I gotta turn the lights on for this. As I indicated before this is Antietam Iron Works was home for nails. Okay? Has anyone ever seen nails like this? There not iron nails.

Elizabeth: It's a cut nail.

MH: It's a cut nail exactly. Cut nails, these are new cut nails. I just bought these at the hardware store just the other day. Okay, they're not quite square, they're at an angle. This is the same kind of nail that was made at Antietam Iron Works in the 1820s. I'm not sure what it's used for I thought these were called concrete nails but they come in all kind of sizes and there's some particular carpentry or construction purpose, I don't know what it is. But they're still made for

that purpose. In any case this nail was used for everything back then and it was made-it was made by taking a plate the appropriate the width of a plate of iron, the appropriate width and the appropriate thickness and a man would stand there with that and the big cutting edge, iron cutting edge would come down, and he would shove it into and then he would flip it over and it would come down on the next side and then you'd flip it back. The reason why you had to do that was because there was some kind of angle on it that equalized that plate and if you didn't do that obviously he'd be running around the corner real fast, you wouldn't get very far.

Elizabeth:[indecipherable]

MH: They they changed that when they mechanized that they changed that and but a cam on that so the cutter did did the changing and all the machine did was feed and maybe the man did was feed. The reason why I bring that up is because a nail factory that was known for good nails had to have good plate. If the plate wasn't precise you couldn't feed it into those kind of machines and come out with a decent nail. And Antietam Iron Works did that. And was well known for that and was well known for that very early as a matter of fact it's just possible that Antietam Iron Works was among the first to successfully accomplish that in the United States.

RECORDING BREAKS

MH: [indecipherable] This is the ownership, owners and operators [indecipherable] for the Antietam Iron Works. [indecipherable, his voice is very very quiet and is hard to understand]. Anyway, this says that the two ironmaking facilities that mined well ore better than any others in the state of Maryland were linked by those people by their idea of conducting business and conducting ironworks. And if I could now, I had, If I indicated early on I had intended to tell you

a chronology of the iron works of the 1850s I know we don't have time for that so I'm gonna tell you a few things yes just little-little pieces, things that I think are interesting and uh not by any means the whole story.

The first, the first piece [indecipherable] the two individuals that formed the first partnership, John MacFerson. John Mac Ferson Sr, he was uh born in 1760 in Pennsylvania and he came to Frederick in 1781. He had been commissioned several tenets [indecipherable]. He was evidently the agent were supplied by the prisoners, there were no more prisoners cornered in Frederick. I presume that that means it had no barracks. But we don't know that, there's not much written about it. That's the whole thing right there. Um in 1783 he met and married a local woman. And he proceeded to build uh an empire: farms, mills, land, houses-built houses and sold them. Some of the grand old houses in the county today was built by John MacFerson [indecipherable]. He was amongst the water company to bring water first to Frederick City. He also aided in the construction of turnpikes in Boonsboro, they call it Boonsboro Pike, Boonsboro Turnpike-pike. [indecipherable] He was a representative-a state representative in town. One of his sons married a relative of a future president and another one of his sons married a cousin a-a granddaughter of Thomas Johnson. Wait, hold on let me back up. He married the granddaughter of Thomas Johnson, his cousin was the wife of John Quincy Adams and it was said they visited the White House regularly. This gives you an idea that of the social structures this man circulated in, he was a big guy for the times. He first got into iron making by, he took over a mortgage from Thomas Johnson at Green Spring Furnace which is out in front of Frederick. He did not hold onto that to make iron his life, couldn't invest it. Just prior to the purchase of Antietam Iron Works [indecipherable]. What MacFerson brought to this partnership was business practice

sense, he brought government connections, his family knew the people downtown, and he brought capital, including investments.

One thing I could have mentioned if you recall a few couple weeks ago there was the Lafayette Ball [indecipherable] in any case it was John MacFerson who wrote the invitation to Marquis de Lafayette to come in 1824 when Marquis de Lafayette was making his triumphant year two year, whatever it was, forum in the United States. He was gotten by Baltimore, he had some really heavy business in Washington but it was John MacFerson who said, "Come on by." Now how did he get away with that? Well I don't know if this is [indecipherable] or not, but Marquis de Lafayette was only three years older than John MacFerson. And if John MacFerson had anything to do with war or the like there was the proof [indecipherable] as young hadn't met each other, I don't know that. [indecipherable] Anyway, that's the kind of individual we're talking about [indecipherable].

Another individual in the partnership, John Greene born in 1766 in Ireland. Immigrated to the U.S. and got a job at, guess what, Robert Coalman's Furnace, Coalbrook. If that name rings a bell a lot to you [indecipherable] I showed you a couple of slides ago. If the [indecipherable] Robert Coalman was John Greene's uncle it may have been, I haven't put my hands in that exact faction but it could well have been the case. The Coalman's were the kind of folks that [indecipherable]. William Coalman, his brother, just was an old [indecipherable] and uh a friend of Ben Franklin and that's the level of aristocracy if you will in Pennsylvania. Here's John Greene's possibly his nephew. In any case he moved to away from Coalbrook, in Lebanon County in Pennsylvania,moved to Boris Town, shipped from York Town in 1787, purchased free forge in 1800, but in 1804 he married Harriet MacFerson, that was John MacFerson's younger daughter. You can see a partnership coming up here can't ya? Okay, there's a-there's a business

partnership coming up here. And sure enough in 1806 John Greene and Harriet MacFerson moved over to the Antietam Iron Works and that is when that uh operation began to came together and was operated and that. Now, John Greene opened the [indecipherable] and moved back to Frederick 1817 and that [indecipherable] and I know this will be [indecipherable]. These houses in Frederick, who hasn't walked around the center of Frederick and said, "[indecipherable]." And then you grow up and read the plaque on them and say geeze. Okay well I'll tell you something. This house is on the [indecipherable] in 1817. This is [indecipherable] House in 1817. [indecipherable]. Anyway there must have been something going right for them of course anything in 1817 was after the War of 1812. Something must have been going right for them or they wouldn't have been doing that. I might parentheticals might conjecture though maybe under-under currents might formed as well though because [indecipherable] John Greene wrote his father-in-law John MacFerson and said, "[indecipherable] iron works and I talked to the coal man, but I just want to get out of here." He said, there's a lot more to that story that we'll [indecipherable] Frederick in 1817. Can you put that down to the last notch so you can, don't have to put up with the [indecipherable].

In 1820 John Greene bought Catoctin Furnace, you notice I said he bought-he bought it solo. Now whether that means John MacFerson had Iron Works and-and the iron baggery of the Iron Works um and this wasn't gonna do it or he didn't have the money to do it or why he didn't go along with it who knows? But he did that and a couple years after that he bought Auburn and put a road in it. You kind of think of Auburn as a city out of [indecipherable] then have the house downtown [indecipherable]. Anyway, in 1834 John Greene went to visit [indecipherable]. He died in Bethlehem, Pennsylvania. [indecipherable]. Then John Greene died and everyone died [indecipherable]. Because he expressed public opinion and he [indecipherable] when John

Greene died he became very rich. For those of you who don't know Jacob Ingelbrekt, the local diarist, who will say something else to you and [indecipherable]. Anyway John Greene after his death was treated [indecipherable]. But John MacFerson's obituary was a column long on the front page. [indecipherable] he was a revered man. He was-he was a touchstone back to the original eight pages [indecipherable].

Anyway that's the partnership and I've left out a ton of things, but we wanna [indecipherable]. Okay, let's go on into a different, jump over to the Antietam Iron Works and for this Mark is gonna have to really focus the light and I told him, warned him ahead of time that I had a lot of [indecipherable]. This is Harper's Ferry and probably [indecipherable]. This is called the Covenant Furnace, has anyone heard of the Covenant Furnace? [indecipherable]. Well with [indecipherable] the first in iron smelting in the smelting part of it. The second half of it is what we usually think of when we think of when we take the bar iron to the forge, that part is converting to raw iron, but there was a better way and it had been invented in Widows at oh probably the turn of the century in 1800 or there about. [indecipherable]. A big ball of iron, it's not small [indecipherable, he may be describing the new iron process; however, he is extremely quiet and difficult to hear]. The [indecipherable] Furnace was newly constructive that the reason why is why it's better than a forgeman [indecipherable-again very quiet and hard to hear]. [indecipherable] in 1817 in this country in [indecipherable] County south of Pittsburgh wasn't very [indecipherable], but we can [indecipherable] in the late 1820s [indecipherable].

Okay, now this is our [indecipherable], alright? My great-great grandfather came Wales to the United States in 1843. Looking through some family [indecipherable] a piece of paper came up and it was his naturalization papers and they say he was naturalized in 1840, okay, in 1840 in Hagerstown, Maryland. And you gotta figure this, here I am in the army in 1813 and I

find this piece of paper [indecipherable] in the town next to where you were naturalized [indecipherable] you don't know anybody in Maryland, you don't have any friends in Maryland, you don't know anybody in Maryland. Okay so, I did a lot of research on this to find out when this man died he was an ironworker from lower New York and he had lived there all his life. We also found out that he was very proud to be a man from Dale, which referred to the Dale Iron Works [indecipherable] like special roads, they were the premiere iron works in making [indecipherable] in 1830. Okay? So anyway, I said to myself [indecipherable] but I think the answer, I hypothesized the answer was that he had come to the Antietam Iron Works around the time that I found he was married in 1830 and in uh Washington County [indecipherable] in 1840, he was naturalized in Hagerstown in 1840. That really left me not only with how do I place this man closer to the Antietam Iron Works and I thought about that for a long time and I decided I would try to check on his [indecipherable] and at that time there was no birth certificate, no death certificate so what I had to do was I had to find two of them into the 20th Century, probably past WWI when death certificates were alive and kept. I did find one of them and on that death certificate it says that man was born in 1832, in 1832 in [indecipherable] Maryland. Okay? And after that time I began to think that question and [indecipherable, Dr. Howell is too far away from the microphone]...there are a lot of records from the Antietam Iron Works and there are a lot of records from the Anglican Church [indecipherable] so anyway let's go on to [indecipherable] those are the Welsh men and women that I know of [indecipherable].

Okay, 1834 [indecipherable, Dr. Howell is too far away from the microphone].

The man that appeared last said, " There's never enough water." And he was right there's never enough water. But I'll tell you something. In 1820 it was [indecipherable] of course, the man appeared to sell the water at Catoctin Furnace.

[indecipherable question in background followed by Elizabeth's indecipherable response]

MH: Yup, yes, that's where…

[indecipherable question in background followed by Elizabeth's indecipherable response]

MH: [indecipherable]

[indecipherable question being asked]

MH: At what time?

[indecipherable response]

MH: If-if-if who-who here in New York on Thomas Jefferson he was asked if he could produce a cannon and he declined because he didn't feel like he had the extra pieces. He was over in-in uh Etna over in Washington County dealing with something else.

[indecipherable question]

MH: Ya know the Civil War talked to people about this, what what happened to the Civil War? It's beyond my schoolbook obligation, I kinda capped it at 1850 and I really haven't looked at that. I'm sure there's a lot of things said about that too. Yeah, but I don't need, I'm confident they did not make cannons for Revolutionary War and I don't believe they did for the War of 1812 either. [indecipherable] You just gotta-there's been a lot of fill brought in [indecipherable] where the grass has been kinda thinning itself. You go walking up there and you'll see [indecipherable] and behind the iron worker's house there are big chunks of [indecipherable]. I don't know I'm not geologist enough to know, but if you really want to know it was written up in the Maryland Geological Survey in 1905, I'm sorry 1911, 1911.

[indecipherable question]

MH: Well it was good iron to a degree but, I can tell you this, it was only suitable for some things like Catoctin Furnace never made bar iron. And there was a reason for that because it was good for some things.

[indecipherable question]

MH: Possibly, I think the ore was probably the answer why and I can tell you why I think that. Well there are a couple of pieces to this. You know how in the obituaries I mentioned of John Greene in 1834? There was found, there was found an advertisement of-just a few columns over of Greene Hardware, I don't know if you know what Greene Hardware was. But it advertised [indecipherable] as bar iron. That's helpful. That tells you something. They didn't go next door [indecipherable] had a bar iron. Things, things such as work availability. The other piece of this is in Antietam Iron Works the uh Harper's Ferry Ironery owned that same ore bed in Virginia and they found it was unusable for their purposes in Virginia for-for uh barrels. [indecipherable] So I have a feeling that the ore was good for things and not quite as good for others, may have been the manufacturing processes as well but -but I think we can tell that it's something about the ore.

[indecipherable question]

MH: Don't know. I think not, this was a real marginal thing and I think [indecipherable] just refused to give he was too tenacious because it was a place that everyone was against it and refused to give and he ultimately wound up operating the almost twelve, certainly the majority of his workers were uh slaves, uniquely there are still slave records and that's probably [indecipherable] of history.

[indecipherable remark/question]

CD ENDS