

Viking Hoards and Economics

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Terminal of a Viking silver bracelet found at Pitgrudy. 27mm in length, it is an example of 'hack silver,' used as currency. (Historylinks Archive number 2011_074)

Thank you, and thank you for inviting me back. I feel like I'm going back to my roots now, roots in many ways. I started out many, many years ago studying Vikings and Viking economies, and since then I've moved on to a number of different places, different areas, different interests.

I've ranged backwards, I've ranged forwards. At the moment I'm working on World War II remains, just to give you an example, so this is nice to have a little break and come back and revisit the Vikings again. Can everyone see that, or do you want me to put down the lights? You're okay, okay.

Well just say if some of them get a bit fading on that. The inspiration for this is actually this little piece, which you can see is miniscule, two centimetres long, found not too far from where we are here today, about a couple of

years ago, about three years ago? And now is on display at the local museum here. [2011-074] When I saw this, I got terribly excited. I know most people wouldn't, but when you see this, it's because what we're looking at is a fragment of an arm ring, such as these that were found at Tarbat. So, we have something here, an object found in Dornoch that relates to basically Scandinavian presence in the area. It shows us basically part of the economies, the bits of precious metal, of silver, of jewellery that moved with the Vikings everywhere they went.

Now the first Viking raids we have here on the British Isles are about the year 800, just before 800. It's short-lived in a lot of places throughout the British Isles, but when we start looking at the north, we have a presence that continues after the initial raids, then we have settlement that comes in their wake, and settlement that lasts for a long time. Where we are here today, it is a very good question, is how long this Norse influence lasted.

It was a case of Orkney and Shetland, they were part of the Norse Empire until the 1400s.

[talk interrupted by an alarm from outside] No, that's okay, I'll just pause here for a moment, let you absorb the map. See the widespread, now it's started again. I was just trying to think how can I pull this into the Vikings, but it doesn't quite, alarms on your boats as you're sailing through.

Right, we'll just, I think, so we have a situation here where the Orkney and Shetland is Norse until the 1400s, the Western Isles until the 1200s, down as far as Dornoch Firth was obviously in these early periods, it's a moot point just how, where the allegiance was, and I suspect it was a certain to and fro. But what we do find here, and I'll argue towards the end by the evidence, including this little fragment we've seen, that we've got certainly here for the early period, the Viking period, we've got probably pagans settled around here, and we've got them hooked into this economy.

The one nice thing for an archaeologist is the Vikings had a set way of jewellery, a set type of house, a number of different aspects that allow you to trace them wherever they went along this route. And so we find similar types of jewellery, we'll find it all throughout, and I'll be pointing out some of these hoards that we find here in Scotland and how they can show us some of this movement. But it's a huge area they covered when you look at it, going from here, Scotland obviously, it was the Norwegians that we were the closest to, but nevertheless we still have influence coming from Sweden, from present day Denmark.

We have certainly a lot of the influence coming there, but the Vikings were also going this way as well, and material is then flowing there and then over to Scotland as well. There's also movement down some of the rivers here, down into the Mediterranean Sea and even along that way, so it's a large area that material is moving around. But it's always worth thinking about, why did these objects go? We tend to think, usually, obviously we think of raids and people raiding and grabbing, but there are lots of different reasons why a Viking, a Scandinavian object, can find itself someplace in another part of the world.

It could be personal possessions by a traveller, a settler, by somebody coming like that. It could be a bribe, and we do find bribes, certainly if we look down at England and on the continent, the Carolingian Empire, the Scandinavian raiders are being paid huge amounts of sums of coinage, basically, to go away, take the money and go, and then this money and this silver starts working its way through the empire. Obviously, there is the plunder, there's trade, which is becoming the more fashionable interpretation of the last 20 years, but two others to throw in.

It can be also gift exchange. It's not so much economies, perhaps, as we have them today, like the budget, but a lot of it is, if I give you something, then you have to give me something, and we'll see some examples of that. But also, things like marriage dowries, things that we have no evidence for in written sources, could well have been a factor as well.

So, there are a number of different ways these objects and possessions can go. Personal possessions like this object, this was found in a grave up in Orkney, a boat burial, and the woman here who was buried there was not buried with the typical Norwegian type of jewellery, which would have been two oval brooches, and we'll see some in a moment. Instead, she had this very old-fashioned brooch, very old-fashioned for the time.

She was a woman in her 70s, and the probability is that when she came over from Scandinavia, she was bringing that, and when she was buried, it was her heirloom, something that would have been distinct like that. So, it's a personal possession, and that's what obviously grave goods can tell us a lot about what people are wearing.

Bribes and tribute. Obviously, a lot of our large collections of silver can come into this. We have, as I said, documentary evidence, certainly in the Carolingian Empire, in the Anglo-Saxon Empire, of huge, huge amounts of silver being paid to the Vikings to go away. And then this material gets taken elsewhere and mixed, and a lot of the coins that we find, we can see must have come from some of these tribute payments that are going through there.

Plunder. Plunder is clearly, obviously it's what most people think has happened, and we have some stories that tell us a bit on how it is, and this is quite a nice one from the Orkneyinga Saga. It talks about a man Sven, telling how he used to live.

In winter, he would spend his at home on Gairsay, which is an island in Orkney, and there he entertained some 80 men at his own expense. So quite a large, wealthy man. His drinking hall was so big there was nothing in Orkney to compare with it.

So, in the spring, he's a farmer. He's out there sowing his crops. Then, when that's done, he goes off.

He goes off and he goes off on his plundering. Interestingly enough, he goes to Scotland, another part of what we would call present-day Scotland, the Hebrides, which is also settled by Scandinavians, so it's not just necessarily natives there. He's going where presumably there's some wealth to take.

And then he goes to Ireland as well, and then he comes, that's his spring trip, and then he has to go back home because he has to bring the crop in. So he harvests the crop, and then after that, he goes off on his winter raiding trip. And it shows you sort of this, it's too simplistic to just think of raiders and farmers, that we've got this mixture coming.

The interesting thing about Sven as well is that in the Orkneyinga, as far as we can tell, the chronologies are a matter of dispute on here, but he's certainly in the latter part of the book. He's not one of the early Vikings. He's not one of the earliest ones.

He would have been one of the ones probably in the, I think it's the 1100s. So it's a time when we think the Viking raids have stopped, he's supposed to be being his farmer and raiding, grabbing what he can.

There is trade. It's hard somehow to document. Certainly, it is easier to document Norse trade when we get to the latter period, when we get into the Norse period. The trading town of Bergen in Norway has wonderful preservation and lots of wooden tally sticks that show a lot of trade and what's happening and where different items are going.

And here in Scotland, we have some objects like here, the Lewis chess pieces, which are not just one chess set, but a number of them. He could have probably done about four chess games out of that, and seems to be the stock and trade of perhaps a merchant, perhaps a trader who's coming through and going to sell off some of these exotic chess pieces. We also have similar, not in perhaps as nice condition, but this is a wooden one from Norway to show we have the same sort of thing that's being found there.

And gift exchange and dowries, well, as I say, the evidence is hard to find for this, but surely it must be a part of it. I'm a great believer that gift exchange was probably more of a factor than we can tell, but without written sources, it's very difficult to demonstrate. One of the things when we find objects as well is, are we dealing with direct contacts from where these objects come from? Are they indirect?

And this is a good case in point. This is a hoard that was found on Skye at Portree. We have Arabic coins. So, they're coming from the Arabic empire. They're down in this area. We have an arm ring up here that originally comes from Russia. It's been cut. It's been chopped up, but originally from Russia. Can we say that we have somebody who's coming from the Arabic empire and from Russia coming straight to Skye? Probably not. More likely, we think, is that they're coming this way and that along the Baltic, coming into the trading networks here in Scandinavia and then moving out from there.

So, we can see movements, but we may not necessarily be able to track exactly how they're coming. As I say, some of the objects are very distinctive and really help us identify where they're coming from. Coins are obviously a case in point. These Arabic coins. We have Anglo-Saxon coins. We have coins that show us not only where they're from, but often exactly when they were minted. And so that gives us good chronological movements as well. Steatite, soapstone, is found in Norway. By and large, most of the Vikings in Norway were aceramic. They didn't use that. They used wood and they used soapstone for a lot of their vessels and objects. They came to Shetland, and they must have been thrilled to find steatite there as well.

And we find it here in Scotland as well. Though now we have to be a bit careful because there is steatite over on the west coast on Kyle. So, it's not necessarily when you find some soapstone steatite objects that you're looking at necessarily Viking age.

Certain types of jewellery, very distinctive. You get an object like that, which is one of these oval brooches, and you know immediately that you're dealing with women's jewellery of a certain period. And certain types of combs are very distinctive and allow us to date. That is a Frisian style comb that was found in Frisia. So, it gives us a bit of information about how things are moving around.

But it's always useful to think about, okay, if we're getting these things coming, these foreign exotics coming along here, what is being sent in return? What are they trading or giving or offering in return for getting this? Well, we have a few hints. We have a man called Ohthere who was at the court down in the Anglo-Saxon Empire at King Alfred's in the 870s. And there's a written account describing what he is bringing and what he gets there. So, he's bringing furs, skins, whale hides, walrus ivory.

If you think about it, how much of that's going to actually survive in the archaeological record? Hardly any of that. Walrus ivory you might be if the conditions are good. You'll have that.

But certainly furs, skins and whale hides virtually you would have no evidence at all. If we didn't have that written account, we would be struggling to figure out what's there. The other, of course, aspect that you would find being traded that you wouldn't find is slaves.

And we think there probably was a very big slave network, again from hints that we can find in other written sources. And they would leave very little trace. So, some of the things, what I want to talk really a bit about now is looking at Viking silver hoards because these are one of the areas that allow you to trace some of these movements and collections of wealth that was there.

We're very lucky we have a corpus that was done in the 1990s on the Viking Age gold and silver of Scotland. More keeps getting added. Obviously, our little ring money fragment here from Dornoch is not there.

The author was very pleased to hear about this. But it shows us, it gives us a bit of ideas about how and where and what are the mechanisms that some of these are travelling. A lot of our hoards, and I won't go through the individual, they're dated there, but you can see that Orkney and Shetland get their fair share and the Western Isles, which is what you'd expect because that's where the Viking presence is, that matches the place names.

But we also have a few here and a few down here as well, down in the south. What are the ones in the south doing? Well, possibly part of the raiding. They've often been attributed to where we have an account of raiding coming through.

But it is interesting that it's not just in the areas where they settled. We do have some hoards that are further to the south. There's about 36 known. A number of them don't survive. A number of them were found in the past and were melted down. Some of them recorded, some of them partially recorded. Almost all of the hoards that we have date to the 900s and the early 1000s.

The one thing about Viking wealth is that it wasn't specific to just a coin. If we have our wealth, we have to have the money that the government recognizes. In the Viking times, anything went. Usually it was silver, but it could be gold as well. It could be objects, complete objects. It could be coins, regardless of what country they were coming from. It could be silver ingots, just a way to store your silver. It could be, and it often is, hack silver, bits that have been chopped up, fragments of any of the others.

And this is the largest hoard that we have from the British Isles. That's just a small bit of it that was found at Cuerdale Ribble in Lancashire. A huge, huge collection of wealth which comprised all of those.

We find the nice thing though, the interesting thing, is you find silver hoards basically wherever the Vikings went. And so therefore, you know it's a part of their society. And the way they valued and the way they obtained goods was in the same way, and also means it's very easy to recognize them.

The composition of these hoards tends to get skewed a bit, as we'll see in a little bit. So, in certain areas, what you find in the Baltic is slightly different than what the hoards that we would find here in Scotland. The problem we're finding with hoards, and this continues, is that very few of these have been found in modern times.

As a result, certainly we have very little indication of what held them, the containers, because people went for the coins or the silver. The very few that we're getting, and we'll see a couple in a little bit, can give us some information about that. But the other thing of course, if they're not found in modern times, they dispersed.

Very few of the early finds ever got recorded in their entirety. By the time they got into the equivalent of treasure trove, basically things had been siphoned out and things had gone. This has happened within relatively recent times as well.

The problem is just trying to get a complete picture of what was there. I think each of these hoards that we have has a story to tell. A story about who owns it, who traveled with it, and how did all those bits and pieces get from all the different countries into somebody's collection.

It's not a story we can ever say definitively what's happening, but I'll give you a few ideas about the composition and what they can tell us. Fortunately for us, because so many of them contain coins, that therefore allows us dating. The dating works on what we call a terminus post-quem date. In other words, the hoard has to have been deposited after the date of the latest coin in it. It gives you an idea of working through that.

The fact that it has a date, though, doesn't actually tell us exactly when the hoard was deposited. It could have been years. It could have been, in some cases, certainly was, centuries that those coins were in circulation before they actually got deposited. Because it's not like here, where certainly after a time the government can enforce it and make sure that old coins are no longer valid. The halfpenny is no longer valid. But in here, it could have gone on and on and on and on.

Interestingly enough, down in Anglo-Saxon England, contemporary with this, they were enforcing it. They had remonied each at periodic intervals. So, it was known back then. But for the Vikings, they didn't care.

Silver was silver. If we don't have any coins, fortunately, some of the objects that appear in these hoards also appear in other hoards that have coins. And so, we can build up these, if you like, these scenarios that allow us to date on them.

So, we have a couple here. What we have here are Arabic coins. Those two date from 899 to 900.

The Arabic economies were the, I suppose, the most regulated, the purest, and the most dated one. Arabic coins are wonderful objects. They're usually pure silver and they give us a date within a year.

Those two coins date from 899 to 900, but they're in a hoard dating, as we think, deposited around 935. So, in other words, they had been travelling for about 35 years before they were deposited. Whereas this one here, here we

have a coin that was minted somewhere between 959 and 975 in a hoard deposited around 986.

Distance doesn't make a difference. In some cases, the Arabic coins are some of the latest coins. So, what does seem to be clear is that silver is moving and moving quite quickly through this world.

Arm rings, which are really an interesting indicator, in different areas of the Viking world had different preferences. Here in Scotland, this ring money was definitely the way that people wanted to store their silver. And this is where we find the most of them.

Elsewhere, we have different preferences. In Ireland, we have this sort of broad band, a hammered broad band with decoration. And that's the traditional Irish one.

And then occasionally, we have other ones that are, this is a beautiful one, this was found at Skaill in Orkney with two biting beasts at the top going around a plaited silver. So different fashions of different types of arm rings. But nevertheless, you still usually find odd occurrences throughout the Viking world.

These plain arm rings; we have gone down in the literature as ring money. And you can see exactly what the archaeologists interpret them as. It's basically a payment metal.

It seems to be, certainly, I would have thought, the colonial Scandinavians here, this is how they stored their silver for use. They date mainly from about 950 to 1050. We have over 90 complete examples, and over 200 fragments that are found in Scottish hoards.

So quite widespread. These are some of the ones from Skaill, the Skaill hoard, again, that's up in, was found up in Orkney.

Sometimes, and we'll find that these extraordinary objects, this is, unfortunately, no scale, but these are big. It's, we'll call them ball-headed brooches, because they have these terminals here and terminals there that are decorated, sometimes with interlaced, sometimes with a thistle pattern, a brambling there. And they're big, about like that, long silver. Somebody wearing that is showing that they have power, prestige, and clearly wealth to display, and also a very dangerous point, if you're not careful. I suspect it must have been going up the other way. These have parallels in the Isle of Man, may have been there, but they're being manufactured somewhere in the Irish Sea area. And we find complete examples and fragments of these.

These are in the Skaill hoard, again, up in Orkney. Ingots are at the other end of the scale. There is nothing fancy about an ingot. Well, that's not true. The Cuirdeath hoard has a couple very interesting ones that have crosses put on them, so there's something special going on. But usually, an ingot is just a way to store metal.

But they're being found in a lot of the hoards, and clearly being cut as well. You can see the lines. They're being designed to be cut in different areas.

So, it's not just a way to store. It's a way of actually taking your money and being able to chop it into whatever you need to at the time. They're certainly concerned with silver purity.

We can see this on a number of ingots. We can see little nicks coming in there, nicks around. This one is a good example.

You can see it just on the side. Somebody's just taking a knife to check that. And we see it on the arm rings as well. There, and a number of them all

along. And what they're doing is they're checking that it's pure silver. And we do find a few counterfeit ones.

But there's clearly a recognition that there's counterfeits around, and you have to check your silver. Less nicking on complete objects, but certainly once they become half silver, everything's fair game. It's basically payment metal, and you have to make sure that you're looking at real stuff.

One of the questions that's always been, that occupied me, because I spent a number of years looking at silver ingots, and then I also spent some time trying to figure out, well, where did the silver come from? Once we have these objects, if we can identify where ingots are being made, if we can identify where some of the other, say, these plain arm rings are there, maybe we can tell a bit more about the movements. I'm not going to go into any great depth here, but what we're looking at here is that there's very distinctive ratios. Silver is an alloy. It's not 100% silver. It usually has some gold in it as well, and other, bismuth and a few other elements as well. And the ratio of the gold per 100 parts of silver is a very diagnostic signature.

So here, if we look at coins, Arabic coins, as you can see, are very much different than Carolingian coins in terms of the ratio of the gold to the silver. This one is Northumbrian Viking coins, East Anglian Viking coins, and a few different, interestingly, different Carolingian coins. This is 875 to, I can't read my slide, I think 905. That's Charles the Bold, that's Louis the Pious. So we have certainly different times, different silver coming into the mix. Even in the Carolingian Empire, they're not getting the same silver. Whereas Arabic coins tend to be very homogenous. Why? Because they have some of the best silver mines at the time. So, they're clearly getting local silver and are able to get most of it there.

When we look at Anglo-Saxon coins, we again have slightly different. These are going through from that Edward the Elder from 899 to 924, working our way right down to Ethelred the Unready. And we can see it again, different times, they're getting different silver into their coins.

And then we look at ingots. And I tried then, the idea was to see, can we match that to that? And interestingly enough, in some cases, well certainly what we find here on the Skaill, the Skaill ring money here, comes at that end, which more or less matches a hoard down in Chester. But some of them have a different ratio and they do plop a bit over.

And I think the end result on this is, my answer to this, can we trace the silver and therefore the origins of the objects? Probably no, because what we have is so much silver moving around and it's going into the melting pot at different times with different aspects, not allowing us to really localize it too much. So, let's look at a couple of these hoards that we have. We've got Storr Rock in Portree, which is one of the earliest Viking hoards that we have here in Scotland.

It was deposited around 935 to 940, had a lot of coins, 111 of them. 19 of them were complete Arabic dirhams. So, 19 of them were completely from the Arabic Empire.

And as we saw, they were only about 35 years old when they were put in from the deposition. But most of the coins there are coming up from the Anglo-Saxon Empire. So, the 935 to 940, just at the time when there's a lot of raiding going on and a lot of bribery going on.

The Danegeld payments are starting and so therefore we have payments coming through. We have 23 very nicked pieces of hack silver, including this Permian ring fragment that came from Russia that would have looked something like that when it was complete. Two penannular brooch fragments.

It suggests as well, not all of this, when did all of these bits and pieces come together? When were the Arabic coins joined with the Anglo-Saxon coins and where were they joined? Did the Anglo-Saxon coins go all the way back to Scandinavia, perhaps by one of these raiders, and they're getting mixed up

with Arabic coins that were coming? Perhaps some with Russian arm ring at that time. Where did these fragments, which are probably Western European, Irish or Scottish, where are they coming in? The more questions that we can answer, but we just get the feeling then of a lot of movement, movement of silver and movement of peoples.

The Skaill hoard which is up in Orkney is the second largest find that we have. It was deposited about 950 to 970, somewhere in that range. It contained over 115 pieces of silver which weighed over eight kilograms. That's a lot of silver and yet out of all of that, only 21 coins are known.

Only 21 coins from that. Most of them from the Arabic empires, not from Anglo-Saxon empire. So, they're coming presumably over from Scandinavia with a lot of this material.

Though if we've looked at these, which are probably Isle of Man, we have our first appearance of our ring money coming in there. We've got some very unusual and interesting arm rings and a lot of ingots and various other bits and pieces as well.

Iona, another hoard but a very different type of hoard. Over 300, it's mainly, only three objects, everything else is coinage here. Deposited about 986. It had mainly Anglo-Saxon coins but three Norman coins as well, some three coming from the continent.

The three objects are very interesting. Unfortunately, this is a black and white slide because what we have here, this is gold. This is a silver finger ring bezel. In other words, a bit that would have been on a top of a finger ring that had gold filigree and green glass. And we've got this basically ingot that's been curled around. What is a hoard like this doing in an abbey on the West Coast?

986, it might give you a clue here. I mean, that seems awfully precise, doesn't it, compared to the other dating. And it's because we know that there's a Viking raid about that year. It works well from the chronology of the coins that we have here, and the suggestion is that we may well have here a Viking raid, somebody who has the Viking, presumably a Viking owner, who has his wealth, his share, buries it for safe keeping and presumably meets an end where he can't go back and collect it.

Unlikely, one would have thought, and the assumption then is that this, something like a finger ring, would have been ripped off some, perhaps a monk, perhaps some of the wealth there, who knows. So, it's hard to know who's there.

But of course, it could be, it could be the wealth of a monk at the monastery who had gathered some of this, perhaps less likely given the types of objects here and the fact they're fragmentary.

Closer to home, and one of the most interesting ones, and a very important hoard that's not really known that much about, is the Tarbat hoard. It's late, much later than the others, deposited about 990 to 1000, had at least 14 coins.

I say at least because it's quite clear that not all the coins made it in to be recorded. There may well be some more Viking coins out there, still in houses within the area. One of them was Anglo-Saxon, and it was minted in the reign of Edgar, who died in 975, so clearly was quite an old one. The rest of them are from the Frankish Empire, and they're from a trading town called Quentovic, a trading emporium at the time.

Good question, who owned this? Why was it deposited in the church wall in a monastery? Which if we now listen to Martin Carver, Martin Carver's arguing it's not a monastery at 990 to 1000. At this date, it ceased to be a monastery, and is now basically just a church, a community there.

Why is this down there? The tendency, the traditional interpretation is that, again, this is somebody who was raiding, though it has to be said it's quite late for a raid, was raiding and deposited there for safekeeping and then met a bad end. I would have thought an equal interpretation would be, as we'll see, we have Scandinavian and Scandinavian settlers in the area, and if you want to put something for safekeeping, what better place than a church wall where it might be? So, it doesn't have to be a reason for it going there is violence, it could just be a safekeeping. And why Frankish coins? That's another, why, how do we get here on the east coast a find that has so many coins that are so far away? We do find Frankish coins on some hordes over on the west coast, are they coming down the Great Glen with Vikings at the time? Hard to know.

A recent find, and this is an example, if you do get something that's found recently, you can get a bit more idea about the container. It's in dreadful condition, it's very fragmentary, found metal detecting, dates somewhere between 990 and 1040, and the reason that's so imprecise is we have no coins with this one. So, we're basing it primarily on when we have a lot of these types of ring money fragments.

Everything cut up, it was in a cattle horn, and then that was wrapped in a linen cloth. So again, somebody's wealth just deposited down. It shows again, very similar to our little fragment here from Dornoch, the same sort of ring money, in this case it's, well, we would have just a little section like that.

And Burray, finally, our sort of latest one I'll show you, again, is 997 to 1010, so quite a late one. Second largest coin hoard or silver hoard that was found in Scotland, probably very few coins, but it's again, almost all hacked silver, about two kilograms of that, and of those 140 pieces of hacked silver, 131 of this ring money. We can see it definitely is this Scottish Viking way of storing your wealth.

So, it's portable, and why would you do something like an arm ring like this? Well again, a Scandinavian source from the Middle Ages, but it gives us a story about a poet, a poet who's supposed to have lived in the Viking times. He composed a poem about the people of Iceland, and they rewarded him by each farmer giving him three silver pennies.

Now Iceland at that time did not have a coined economy, so again, it would have been just parts and parcel of this silver. We don't know what, whether it was Arabic or Anglo-Saxon or Norwegian, but they gave him three pennies, of full weight and white in fracture, in other words, it had to be pure. It's this obsession that you have to have pure silver. And when it was brought together at the Thing, the assembly, the people resolved to have it purified, and then they made it into a shoulder pin, in this case not a ring, but they made it into a pin for the poet.

And after the workmanship was paid, the shoulder pin weighed some 50 marks, which again is very interesting because it's showing us that the shoulder pin has a value as an object, but it also has a value on how much weight it is. It's valued by, if you like, it's bullion value. They sent it to the poet, but he wanted a farm, so he broke it into pieces and used it then.

And it gives you a good indication about how objects can be objects to wear, objects to show prestige, but also can be taken apart if you want to buy something by bullion weight. And so, clearly, this silver had to have been weighed, and we do have some weights and balances. This is from a Viking burial that was on Colonsay, Kiloran Bay, and the man who had every bit of weaponry that a Viking could have, he had a sword, he had arrows, he had a spear, he had axes, and he also had a set of weights, and these beautiful weights there, they've been made with plundered metalwork that's been put onto a lead base, and clearly were meant to be weighed.

Elsewhere, we have a few other balances, and this is a weight that was recently found up in Orkney of a different type. Dots on it indicating presumably some sort of weight units, though we're still struggling to know

exactly what the units mean. We spend a lot of time, there's been a huge amount of ink spilled on Viking weight units, trying to figure out what is this, it's like the Holy Grail, trying to find out what they are.

I've spent a lot of time doing this myself, and probably come to the conclusion, well, I have come to the conclusion that everything was more or less imprecise. You can always cut it up and add a few things in, and I suspect balances, whose balance are you going to trust? If you're going out to get something, are you going to trust the other persons, are you going to have your own as well, and there's going to be a certain give and take, are you going to trust their weights, or are you going to bring your own weights, and there's going to be cutting up and moving around. Here's an example of trying to figure out, well, I looked at ingots, and I figured ingots basically are so un-aesthetic that they must be being cut to some sort of weight unit.

I looked at weights, and then clearly realised this was a problem, because almost every weight that we have in the Viking Age is corroded in some way, or has some damage. So, a weight that we find doesn't necessarily reflect what was used in economic transactions. So here we have here, the A line, the first line here, are weights, this is in grams 10, 20, 30, 40, 50, 60, and then moving along, you sort of have to transpose that up over here.

Here we have then, in the B line, ingots that are weighted from Scotland, and the C line is basically ring money, showing us what we have there. And really, if you start looking at this, I mean, maybe some of you can see a pattern, but I personally couldn't after a while, it just basically, the argument is, and this argument has been used as we'll see with ring money especially, is that somebody has published a very precise weight unit in the 20s, saying that there's a weight unit, and I've forgotten exactly what it is, I think it's 20.5 grams. Well that's all the ring money we have, and it's pretty broad, we've got 5 grams there, but there's certainly, I think you could argue, maybe there's a cluster here, maybe there's a cluster again when we get double the weight unit, possibly triple, but whatever it is, it doesn't work for the ingots, and the weights themselves seem to be all over.

So I think it's basically at this point, this is why I've come to the conclusion that there may have been an idea weight unit, but the precision that we think of in this digital age, that you can go down to 3 decimal places, that you have it exactly, it just doesn't work, and I can't see it working at that time in the Viking age, that more or less you knew what you were. Of course, the other thing that we say is, is the same weight unit, if there is one, we know there is one say in Anglo-Saxon England, because we hear in some of the charters about the weights that are in some of the boroughs, is that the same unit that you have in Ireland? Is that the same unit that you have in Scotland? Or even in Scandinavia, is what's happening in the Swedish trading towns the same as the Danish trading towns? And I think the likelihood is no, partly because we're looking at different weights in different places as well. So, I think our precision is, if we can get away from that, just realise there's always another small ingot fragment that you can throw into the pan to make it up to something that's agreeable.

We also, interestingly enough, is that we have these silver hoards, and then they decline and virtually stop in the 11th century. There's still settlement, certainly up in Orkney, as I said it's until the 1400s, Western Isles 1200s, but we don't get any more silver hoards. Why is this? And there's virtually not even single finds that can date to that period.

Is this that we've just been unlucky in the preservation? Or there's another theory that perhaps what we're looking at is a silver crisis, that the mines are not producing as much, and that therefore we don't basically have as much silver going in. I think it's salutary to remember as well that the first coinage that we have here in Scotland doesn't start until David I in the 1100s. So, before that, there is just, whatever is happening, whatever the exchanges are going, even in the non-Viking parts of what becomes Scotland, they're not being done that way.

They're either using foreign silver, foreign coins coming in, or there's a lot of barter going on. And I think for a number of these, certainly it's worth thinking about how much of this silver was actually being used in circulation.

The hoards that we look at overwhelm us. The Skaill hoard is enormous. The Burray hoard is huge. All of these, are these being somebody's day-to-day, or is this just a warlord's chest? If you want to go out and buy a loaf of bread, are you going to go out with a bit of silver, or are you going to barter something else? It's how much, what was, silver I think may have been used for prestige as much as anything else.

And therefore, in the 1,100s, sorry, the 1,000s, when it starts to dry up, other things become what you use for prestige. So why do we find a ring money fragment here in Dornoch? It's a very interesting question.

We have a hoard down in Tarbat. We have one ring money fragment in a field that's had a fair amount of metal detecting done and nothing else found. I would have thought, the chances are, if it had been a dispersed hoard, we might have found more of it.

There are other places where we do find ring money fragments, where they're not in a hoard. And I think as metal detecting continues, we will find a bit more of this, that it is perhaps in some places trickling down, certainly on the fragment scales. But I think it also suggests to us that we have an early settlement here, an early Norse and Viking settlement.

Remember, our ring money, it's mainly 950 to 1050. So we're in that sort of a period here. Our hoard from Tarbat, about the year 1,000. What's our evidence for settlement here? Well, we certainly have what seems to be some very dispersed Viking pagan graves that were found in Golspie.

These are two of the undershells of two of these oval brooches. And it would have had another bit of metal on that that would have been openwork to look somewhat like this one, which is again a local one that's found in Ospisdale, just not too far from here. And they're suggesting, this is again from Golspie, obviously the handle's recent, but an axe as well, probably part of a male grave, with the sorts of objects you find.

That combined with a lot of our place names here, place names like Embo. Embo, the bo part of it is from bostader, meaning a farm. So it's suggested that we have here pagan graves and then probably settlement coming after that.

And to the point where, in fact, our furthest south at the moment of a, I was going to say a, probably a Norse find, a Viking find, is Tarbat. We have place names further south, and Dingwall makes a great play of being the place the Vikings came to stay, but it's not necessarily, I mean, this is only a place name. We don't have any of the archaeological evidence.

We have a couple interesting metal detector finds that have just come up to further south, a Norse mount that was found at Ardersier, that dates from about 1050, and a ring-headed pin that might date from the Viking period. But by and large, most of our finds stop here at the Dornoch Firth, and certainly the pagan, what looks like pagan graves. And I think what we have here with our ring-money fragment is an example of showing this area at this time between 950 and 1050 of a settlement here, and possibly even some sort of a trading, but maybe even a frontier, a frontier area.

What it is, though, is certainly combining that ring-money fragment with the oval brooches and the information here, showing a definite Scandinavian presence, and part of this large-scale economy that goes all throughout the Viking world.

Thank you.

Questions?

Yes, of course.

Okay. Who's got the first question?

When they took the nicks to assess the purity, were they looking at the softness of the metal, or the colour of it, or a combination of these things?

I think a combination of them, probably. Certainly, James Graham Campbell, he's of the opinion that they would go to the Vikings, and they would go through and just sort of go chop, chop, chop, chop, chop through that, and you would have got a sense of how easy it is to bite into it.

When I did the silver analysis of ingots, I did some from the Cuerdale hoard, and one of these ones that have were big and had the cross on it, and one of them was a forgery. I don't know whether it was a Viking forgery, and that's the interesting thing, is it a Viking forgery, or is it a later forgery to go into the museum, but certainly, I mean, it was a forgery, and there are forgery ones that are known in Scandinavia as well.

If you found silver, would it be dark, black?

It often is. It all depends on the soil, the soil conditions, but it is one of the purer ones, so it's not corroded like bronze often, but it does very much depend on the localised...

It wouldn't be shining?

No, no, well, not usually, no.

I was under the impression there were lots of Norse farmsteads above Edderton, but there's nothing been found up there?

No, nothing's been found. The only evidence that we have for farmsteads is place names, and even then, we have two types of names, place names. One is the Bostader names, and these are names that end in bo, or bister, and so they tend to suggest that you might have a settlement. The other place name that's very distinctive is the dale, Swordale, ones like that, and these, they're topographic. They're describing valleys, and so it is a question whether you have that. Is that indication of settlement, or is that just indication of people coming through and naming it in that way?

Are there not styles of buildings up there which were Norse?

Well, the Norse farmhouse is a longhouse, and a longhouse in some cases, it has a byre, and so therefore, it's just a long-lived tradition. You find one like that, and it could well be a post-medieval farmstead. It's exactly what you find in the clearances. Sometimes they have bowed walls, and that's often used to indicate, but then again, sometimes we have slightly bowed walls as well.

So, I would have thought if you have a longhouse like that, the chances are it could be anywhere from possibly Norse, if you're really optimistic, but it's more likely going to be post-medieval.

We don't have the settlements. In fact, this is the big lack here, is our Viking settlements on the mainland, we do not have. We have them on the Western Isles, we have them on Orkney. We do not have any late Norse settlements. The only closest one we have here that's been excavated is Freswick.

I just remember, the forestry were ploughing up above Edmonton, and it was because of the Norse farmstead. Well, so it was said at the time.

The Vikings are an endearing passion to a lot of people. I mean, the number of times we hear about Viking princesses that are buried in certain places that have absolutely nothing to do with the Vikings. It's just, people, it has gone into the popular imagination, and sometimes for centuries. We hear about Danish camps often as well, which are prehistoric usually. The names often get associated with it, but in terms of actual dating and archaeology, Tarbat is the furthest south we have.

Did they ever make geld themselves on their own coinage?

They did in Scandinavia, they did.

They tended to be short-lived and limited, often in just the trading emporia. And again, it was very late in Scandinavia that you had kingdoms coalescing. And so, it's often, in some ways, seems to be almost showing prestige and power by minting your coins.

What they couldn't do is what they did in the Anglo-Saxon Empire and the Carolingian Empire, which those kings were strong enough to say that no coinage can circulate unless it's ours. And the reason you do that is that anybody coming in there has to bring in their silver, get it re-minted into the state coinage, and the state gets a cut. But the Scandinavians did not have that sort of power.

So, we tend to have very short-lived and limited until we get into, it's about the thousands, and then certainly Sweden's the latest. But the other factor, of course, is that we had Scandinavians who conquered England, Svein Forkbeard, and then Cnut. And this was in the very first bit of the 11th century. And so there were concrete places that had these coinage, had mints and that, and they brought a lot of that back. And so obviously a lot of it escalates after that.

How do you think they would have made the ring money?

The ring money?

Yes.

I think there are different ways you could do it.

Some of it's circular.

Some of it's circular, some of it's lozenge-shaped, some of it. I think obviously some of it's hammering down. We can see in Ireland that they take an ingot and hammer it and sort of bend it, and that's a very crude one. And then it gets hammered smoother and smoother and smoother. Ours though, because they have the round ones, I'm not sure whether they would draw it out or how they would...

Because I made a replica, to make sense of the bit they got. I did it with a gloss wax process, which obviously they wouldn't have done, I wouldn't have thought.

I don't know enough about this.

I'm just thinking about how to do it. I wonder myself, how would they have gone about this? Because when you actually try hammering a piece of metal as round as that, as smooth as that, because it is absolutely smooth and beautifully tapered, you begin to realise that it's not just a straightforward thing of getting a silver ingot and knocking hell out of it and ending up with a nice bit.

That's right.

And at the end of the day, it was what it was to look nice as well, I suppose.

You're wearing your wealth. You're showing that you have that power. But interestingly enough, it's not decorated. The ring money is plain, unlike the Irish and like the others. And yet you're right, it's not dead simple just to knock one of these up. Certainly, the ones that have a more square-shaped or lozenge-shaped, you could do it just by hammering and hammering and getting it down.

It wouldn't be so comfortable to wear, actually, would it?

But is fashion comfortable. I mean, what you're wearing is showing prestige here. You're showing wealth.

Would you have worn the whole lot? Or would you have just kept one for hacking a bit off and the rest in your pocket?

I don't know. I don't know. I mean, it is clearly, I mean, the name of it, ring money, is because it's not decorated that we tend to think it's just purely utilitarian. But maybe that was the style to have, just simple.

But comfort, I never, comfort doesn't come into this. I mean, comfort in fashion and showing prestige and wealth, I mean, that's, look at shoes.

Could they have cast it? I mean, is that something that would have happened then? Could they have cast it? Could it have been done?

Well, it certainly did. I mean, they had very sophisticated casting. You look at those oval brooches, and they have the undershells, and then they cast on a lost wax one there.

I'm just wondering whether they were able to draw it. Because we do have tongs. They certainly do have metalworking tongs, and so.

And it's soft.

And it's soft, and whether you could draw it through something. But I don't know enough about that. It's something, you know, I'm sure somebody's done some experimental replicas on that, certainly in Scandinavia, it'd be worth checking that out.

What's the most likely way that they would have cut sections off of the ring money?

Well, they clearly are, in some cases, sort of starting them off. So, I would have thought a hammer and a chisel. You start with that, and you just bang it, and you get the first line there. And then, I'm just, you know, you just guess and think, well, they're going to go about halfway. It looks about right. Start it there. And then you come down with a harder blow. But a lot of them, it takes, they miss, it takes a number of them. They snap it off, because they're too impatient to cut it down there. They're not sawing. They're clearly hammering to come down.

And interestingly enough, some of the ingots, which are, as I say, very plain, they're cast, and they're very easy to cast an ingot. But a lot of times, then, they're hammered after that. And I suggest, why bother to hammer an ingot, which is just your bullion, unless you're preparing it in some way so that you can make an easy cut on it and get it down to your weight units.

Do you get a bit of bronze as well, bronze jewellery?

You do get bronze jewellery, yes. What you don't get is bronze hoards, because that's not the value of transactions. It's obviously clearly not, bronze is for show, but silver is for exchange.

But you do find, in some cases, something that will be found in silver will then also be found in, a type of jewellery will also be in bronze, which we assume, then, is the sort of less wealthy. This lovely mount that was found down in Ardersier, this Norse mount that dates from about 1050, that was of a type that is often found in silver as well. In this case, it's an openwork one in bronze.

What about gold, then? You said that some of the silver has got some gold in it, but there's no sort of gold found?

Not much. We do have, like that one for the Iona hoard, has a very small one. We do have gold finger rings, so clearly the value of gold is so much more than the value of silver. It's very difficult to know what, was it five times, ten times what it was, but clearly there's less of it, and it must be more valuable. Occasionally we do find very wealthy Norwegian graves, for example, some of the jewellery we found in some of the hoards there are gold, but it seems to be a much, much wealthier metal, and silver is the common denominator.

Partly, I think, because silver mines are being found at the time. We have these Arabic mines, and the amount of Arabic coins that were being minted is phenomenal, just even what came into Scandinavia alone and through the Baltic. There's a lot of them in Russia, all along the Baltic.

It must have been minting at a huge scale, and it basically flooded the market, it was accessible. And then towards the end of this period, in about

the year 1000, we have silver mines in Regensburg in Germany, in the Ottoman Empire that opens up, sorry, the Ottonian Empire that opens up. And so that then creates, so silver was accessible, gold was harder to find, and harder to get in those quantities.

And also, is it possible that any gold that there was, has, been reused by people down the years?

Yeah, absolutely, and we certainly, when you saw my attempt to sort of check what the silver was, clearly people are melting. They're in the melting pot, but it's not even just melting the contemporary, they're melting that. It's always been a way, you take your old-fashioned bit of jewellery and you throw that in the pot, and make the new fashion at the time.

We only have to see a lot of these, a lot of our wonderful objects were made into the melting pot when they were found in the 1700s, 1800s. It was precious metal. The Rogart brooches, which are Pictish, but Rogart brooches, most of those ended up in the melting pot because of the precious metal.

So, it's always happened that people have just taken them for their bullion value.

If most of the silver in the earlier period was from the Arab world, surely that shows there was a huge amount of trade between the Vikings.

Yes, there was certainly movement there. Again, we're back in, why are they doing that? Why is it coming? Is it trade? There's certainly mercenaries coming down there, so we do have some accounts of Vikings coming in and doing trade, but we also have accounts of raiding as well. But yes, there's a lot of it, a lot of it going on.

Okay, does that exhaust all the queries? Susan, do you want to say something about the books you brought?

Oh, I've just brought a few of the art books in case people are interested. One of them describes Golspie and the work that we did there that I talked about, was it really three years ago? Well, I can't believe it was that long. So if anybody's interested, I just brought a few along, which we're just asking for donations to cover the printing costs.

Thank you.

Okay, well I think you've done it again. You've delivered a most interesting lecture. We're much obliged to you for coming down and for asking, ladies and gentlemen, to express your thanks in the usual manner.