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00:00:00,000 --> 00:00:29,840

How did men find the technology two and a half thousand years ago to melt

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00:00:29,840 --> 00:00:39,240

rock and turn their hilltop fortresses into impregnable glass?

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00:00:39,240 --> 00:00:45,560

Can this German scientist justify his astonishing claim that these relics are an electric battery

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00:00:45,560 --> 00:00:47,680

invented long before the birth of Christ?

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00:00:47,680 --> 00:00:53,280

The remarkable thing is that these objects are 2,200 years old.

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00:00:53,280 --> 00:01:01,400

That means 2,000 years before electricity was invented in Europe and Italy.

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00:01:01,400 --> 00:01:09,060

In Athens, has this distinguished professor found irrefutable evidence of ancient wisdom?

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00:01:09,060 --> 00:01:15,520

Can it be that in the heart of this fragment lost from a ship 2,000 years ago lie hidden

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00:01:15,520 --> 00:01:20,640

the cog wheels of the world's first computer?

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00:01:20,640 --> 00:01:26,200

Mysteries from the files of Arthur C. Clarke, author of 2001 and inventor of the communication

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00:01:26,200 --> 00:01:27,440

satellite.

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00:01:27,440 --> 00:01:32,400

Now in retreat in Sri Lanka, after a lifetime of science, space and writing, he ponders

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00:01:32,400 --> 00:01:36,680

the riddles of this and other worlds.

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00:01:36,680 --> 00:01:43,360

A lot of rubbish has been written about mysterious knowledge possessed by the ancients.

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00:01:43,360 --> 00:01:49,000

They didn't need any help from visitors from outer space to do this sort of thing, part

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00:01:49,000 --> 00:01:56,840

of a vast irrigation system built in 700 A.D. still in full working order with a little

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00:01:56,840 --> 00:02:00,000

assistance from modern engineers.

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00:02:00,000 --> 00:02:02,160

But there's nothing mysterious about it.

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00:02:02,160 --> 00:02:08,960

We know exactly when it was done 13 centuries ago, we even know the names of the builders.

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00:02:08,960 --> 00:02:13,520

On the other hand, there are some relics from the past which are truly mysterious because

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00:02:13,520 --> 00:02:20,440

they challenge our ideas about the level of technology that existed at the time.

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00:02:20,440 --> 00:02:25,200

There are also some things from the past which, though they may not challenge any of our existing

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00:02:25,200 --> 00:02:28,600

concepts, are still puzzling and enigmatic.

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00:02:43,520 --> 00:03:07,800

Heathrow Airport, London.

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00:03:07,800 --> 00:03:13,320

Miss Anna Mitchell-Hedges newly arrived from Toronto, Canada.

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00:03:13,320 --> 00:03:18,040

With her in her green bag, she has brought one of the greatest jewels in the world, a

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00:03:18,040 --> 00:03:34,520

headache for the security men and half a million dollars worth of mystery.

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00:03:34,520 --> 00:03:40,800

In London, the tangled story of her sinister treasure may at last be unraveled.

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00:03:40,800 --> 00:03:45,840

She found it herself in a lost city when she was a girl.

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00:03:45,840 --> 00:03:52,240

My father was excavating in Central America and British Honduras and we found an old ruin,

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00:03:52,240 --> 00:03:57,640

a Maya, who he thought had something to do with Atlantis.

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00:03:57,640 --> 00:04:03,200

We excavated for about seven years, clearing the ground, and then one day we spotted something

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00:04:03,200 --> 00:04:09,840

shining through the stones and that was my 17th birthday, so we were full of happiness

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00:04:09,840 --> 00:04:10,840

and joy.

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00:04:10,840 --> 00:04:23,800

I'm bringing it to London because I want the British Museum to have a test at it and

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00:04:23,800 --> 00:04:38,560

to find out more of its history if we can.

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00:04:38,560 --> 00:04:41,800

Burlington Gardens near Piccadilly Circus.

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00:04:41,800 --> 00:04:46,760

Few of the works of art brought here for analysis at the Museum of Mankind present a challenge

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00:04:46,760 --> 00:04:52,000

as great and as frustrating to the experts as the one Anna Mitchell-Hedges unveils in

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00:04:52,000 --> 00:05:06,040

the laboratories in the depths of the building.

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00:05:06,040 --> 00:05:12,040

This is the weirdest gem in the world, the skull of doom.

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00:05:12,040 --> 00:05:18,080

The circumstances of its discovery were bizarre, its origin is unknown, and its powers some

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00:05:18,080 --> 00:05:22,960

say are fatal.

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00:05:22,960 --> 00:05:32,320

The Maya people say it was used to will death or to heal and like if an old medicine man

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00:05:32,320 --> 00:05:40,240

or a witch doctor was getting too old to perform a ceremony, a young man was chosen and both

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00:05:40,240 --> 00:05:47,480

laid in front of the altar and the high priest would perform a ceremony and the old man knowledge

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00:05:47,480 --> 00:05:53,640

would go into this young boy and the old man would pass away peacefully but this young

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00:05:53,640 --> 00:05:58,480

boy would get up as a very knowledgeable young man.

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00:05:58,480 --> 00:06:05,000

This crystal skull here has tremendous power but it also gives you a warning that something's

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00:06:05,000 --> 00:06:12,520

going to happen.

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00:06:12,520 --> 00:06:17,960

To Anna's father the crystal skull was the strangest trophy in a lifetime of adventure.

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00:06:17,960 --> 00:06:23,000

Mike Mitchell-Hedges, explorer and celebrity of the 20s was a man who'd take on a crocodile

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00:06:23,000 --> 00:06:26,920

before breakfast and before donning his trousers.

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00:06:26,920 --> 00:06:32,640

Primitive tribes offered him their choicest brides and held him as a god and using only

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00:06:32,640 --> 00:06:41,920

a rod and line he reeled in some of the great and monstrous creatures of the oceans.

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00:06:41,920 --> 00:06:47,640

In 1924 in British Honduras he found his buried city Lubantun.

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00:06:47,640 --> 00:06:51,760

Mitchell-Hedges believed it was part of the lost Atlantis.

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00:06:51,760 --> 00:06:57,240

With the local people the Maya he cleared the jungle from Lubantun's pyramids and platforms.

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00:06:57,240 --> 00:07:02,640

On the last of these expeditions he brought Anna his adopted daughter to the city.

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00:07:02,640 --> 00:07:07,680

It was on her 17th birthday that they first glimpsed the crystal skull amidst the fallen

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00:07:07,680 --> 00:07:10,400

stones.

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00:07:10,400 --> 00:07:16,040

For days we kept seeing something shining through the stones where the sun was giving

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00:07:16,040 --> 00:07:20,280

and of course we were anxious to get to that one spot.

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00:07:20,280 --> 00:07:25,160

I went to pick it up because I had smaller hands than the other people did and I picked

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00:07:25,160 --> 00:07:31,600

it up and showed it to my father and he just couldn't believe that we found this beautiful

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00:07:31,600 --> 00:07:33,400

crystal skull.

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00:07:33,400 --> 00:07:39,360

As you see it's got all the little lumps that you have on your own head and all the, if you

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00:07:39,400 --> 00:07:45,840

look deep down in the eyes you'll see sockets down in the eyes and the jaw moves like a

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00:07:45,840 --> 00:07:48,040

human jaw.

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00:07:48,040 --> 00:07:52,720

Almost from the day of its discovery this, the largest worked gemstone in the world,

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00:07:52,720 --> 00:07:54,680

has been a mystery.

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00:07:54,680 --> 00:07:58,240

Thomas Gann who was there and Lady Richmond Brown stayed silent.

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00:07:58,240 --> 00:08:03,240

Mitchell-Hedges simply said it is the embodiment of all evil.

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00:08:03,240 --> 00:08:08,280

But the question remains was it really an ancient symbol of death that took generations

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00:08:08,320 --> 00:08:12,000

to fashion or could it have been modern?

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00:08:12,000 --> 00:08:17,400

The only hint lies in an uncannily similar but less intricate skull in the care of the

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00:08:17,400 --> 00:08:20,360

Museum of Mankind in London.

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00:08:20,360 --> 00:08:25,880

It was bought from Tiffany's, the New York Jewelers in 1898, property it was said of

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00:08:25,880 --> 00:08:30,000

a Mexican soldier of fortune.

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00:08:30,000 --> 00:08:35,320

Rock crystal is impossible to date but the Tiffany's skull does bear a faint trace which

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00:08:35,360 --> 00:08:40,360

could betray the moment when a modern cutting tool accidentally slipped.

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00:08:43,880 --> 00:08:46,800

The tests begin on the Mitchell-Hedges' skull.

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00:08:46,800 --> 00:08:49,800

It is weighed in water and in air.

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00:08:54,000 --> 00:08:58,000

The result, it's genuinely pure quartz rock crystal.

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00:08:59,000 --> 00:09:04,000

That's very nice indeed.

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00:09:04,000 --> 00:09:07,000

2.65 which is just what it should be.

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00:09:07,000 --> 00:09:09,000

That's absolutely great.

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00:09:09,000 --> 00:09:14,000

There are no tell-tale scratches on this flawless surface to help top gem expert Alan Jobbins

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00:09:14,000 --> 00:09:17,000

date the skull of Doom.

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00:09:19,000 --> 00:09:23,000

We see no positive evidence on it that the metal has been used.

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00:09:23,000 --> 00:09:27,000

There's no positive evidence of that but it may have been very skillfully concealed.

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00:09:27,000 --> 00:09:30,000

It's a skillful, sophisticated job.

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00:09:30,000 --> 00:09:36,000

If it's made by primitive people it's absolutely amazing because the standard of

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00:09:36,000 --> 00:09:38,000

workmanship is absolutely first class.

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00:09:38,000 --> 00:09:43,000

It must have taken anybody who made this a very considerable length of time even if he

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00:09:43,000 --> 00:09:49,000

were using modern diamond tools and every modern device that was available to him.

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00:09:50,000 --> 00:09:55,000

The most likely source for quarrying such a large and immaculate block of crystal would be Brazil.

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00:09:55,000 --> 00:09:59,000

But where and when it was worked are pure guesswork.

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00:09:59,000 --> 00:10:05,000

Whether it was worked in Honduras or Mexico or whether it was worked in Europe or Japan or China,

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00:10:05,000 --> 00:10:08,000

I wouldn't care to say. I just wouldn't.

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00:10:09,000 --> 00:10:15,000

In terms of mystery concerning their origins, I think it's likely to remain a mystery for a very long time.

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00:10:15,000 --> 00:10:22,000

The probability is that the material came from Brazil and it came from Brazil probably post 1700,

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00:10:22,000 --> 00:10:24,000

sometime like that.

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00:10:26,000 --> 00:10:31,000

But Alan Jobin's theory is one with which Anna Mitchell-Hedges totally disagrees.

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00:10:36,000 --> 00:10:41,000

The skull was made long before that about 3,600 years ago.

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00:10:41,000 --> 00:10:43,000

This is what the Maya people told us.

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00:10:43,000 --> 00:10:54,000

I lived seven years with the Maya people as a child and I lived in eighth and slept the same way they slept on the earth.

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00:10:54,000 --> 00:11:01,000

And once you live with people who are so down to nature, you got to believe them.

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00:11:05,000 --> 00:11:10,000

But what are we to believe about the strange vitrified forts of Scotland?

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00:11:13,000 --> 00:11:19,000

The Iron Age hillfort of Tapo Noth, more than 1800 feet up in the hills of Aberdeenshire.

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00:11:20,000 --> 00:11:24,000

Ian Rolston is one of countless archaeologists who have climbed to this cold summit,

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00:11:24,000 --> 00:11:32,000

seeking to explain why the fort's high walls are built not of loose stones but strangely of melted rock,

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00:11:32,000 --> 00:11:37,000

rock that will melt only at furnace heat, more than a thousand degrees centigrade.

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00:11:38,000 --> 00:11:44,000

It's absolutely solid. In places one can kick it, it won't disintegrate, it's as if it's cemented together.

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00:11:44,000 --> 00:11:49,000

In fact, what appears to have happened is that at some stage, presumably with great heat,

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00:11:49,000 --> 00:11:53,000

the rocks have melted, or at least partly melted.

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00:11:53,000 --> 00:11:57,000

And here, for example, we can see one bit where the rock has gone really glassy.

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00:11:57,000 --> 00:12:01,000

It's been absolutely molten here at some stage.

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00:12:01,000 --> 00:12:07,000

One fort where the walls have vitrified or turned to a kind of glass would be strange enough.

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00:12:07,000 --> 00:12:11,000

But Tapo Noth is one of at least 50 scattered throughout Scotland.

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00:12:11,000 --> 00:12:16,000

And no one has yet managed to explain whether the rock walls, sometimes hundreds of feet long,

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00:12:16,000 --> 00:12:22,000

were melted accidentally, perhaps in battle, or whether the fort builders used some technique now lost

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00:12:22,000 --> 00:12:25,000

to strengthen the walls by welding the rock together.

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00:12:28,000 --> 00:12:34,000

Ian Rolston, in an ambitious attempt to crack the mystery, decided to build his own Iron Age fort.

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00:12:35,000 --> 00:12:41,000

The idea here is that we hope to reconstruct what one of these walls looked like before it was vitrified.

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00:12:41,000 --> 00:12:46,000

We know that these walls must contain considerable quantities of large timber beams.

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00:12:46,000 --> 00:12:52,000

These have been recorded, and sometimes they also turn up on the forts that have been vitrified.

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00:12:52,000 --> 00:12:58,000

Professional dry stone wallers toiled for days to build the wall of rocks laced with timber.

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00:12:58,000 --> 00:13:03,000

For the wall itself to catch fire, it's a very difficult task.

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00:13:03,000 --> 00:13:08,000

For the wall itself to catch fire, tons of loose timber must have been stacked against the face.

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00:13:18,000 --> 00:13:23,000

This, as regards authenticity, I think is a very good attempt at one of these walls.

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00:13:23,000 --> 00:13:27,000

Of course the main thing is it's only part of the circuit of a defence.

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00:13:27,000 --> 00:13:31,000

We've only built something like six or eight metres in length.

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00:13:31,000 --> 00:13:36,000

So it's a part model, but that part I think is fairly accurate.

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00:13:44,000 --> 00:13:50,000

Within minutes of the fire being lit, the wood stacked on the outside is well alight.

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00:14:02,000 --> 00:14:09,000

Within an hour the framework of wooden beams has caught fire, carrying the flames to the heart of the wall.

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00:14:09,000 --> 00:14:14,000

It is here in the centre that enough heat may build up to melt the stones.

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00:14:14,000 --> 00:14:17,000

Outside they are already beginning to crack.

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00:14:17,000 --> 00:14:24,000

After several hours and many tons of wood, a load of old furniture has to be commandeered from the local dustmen.

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00:14:24,000 --> 00:14:27,000

It is the only way to keep the temperature up.

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00:14:27,000 --> 00:14:33,000

Later, yet another consignment of wood, the sixth of the day, arrives to keep the fires burning.

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00:14:33,000 --> 00:14:38,000

As night falls over Aberdeen, weary helpers begin to see the fire.

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00:14:38,000 --> 00:14:41,000

The fire is burning.

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00:14:41,000 --> 00:14:48,000

As night falls over Aberdeen, weary helpers begin to realise the true extent of the mystery of the vitrified forts.

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00:14:48,000 --> 00:14:55,000

To wonder not only how the fort builders could achieve the searing temperatures needed to melt the rock,

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00:14:55,000 --> 00:15:01,000

but how they managed to drag vast quantities of wood up to the hilltops with only primitive transport.

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00:15:11,000 --> 00:15:16,000

The morning after, and deep inside the wall, the fort is still burning.

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00:15:22,000 --> 00:15:31,000

22 hours after the fire was first lit, it's time to demolish the wall and see whether the stones at its core have melted.

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00:15:31,000 --> 00:15:38,000

At first sight, the result looks disappointing. There are no ramparts of fused stone.

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00:15:38,000 --> 00:15:42,000

The search is now on for evidence that any rocks have melted.

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00:15:42,000 --> 00:15:49,000

Yeah, that's it. The rock here has melted completely. Look at it, it's bubbled on one side.

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00:15:49,000 --> 00:15:53,000

Great. God, it's hot.

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00:15:53,000 --> 00:15:56,000

Hot for more here.

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00:15:59,000 --> 00:16:05,000

We've been able to show that at least a very small quantity, in the case of this wall,

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00:16:05,000 --> 00:16:09,000

of the rock has indeed melted and then re-solidified.

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00:16:09,000 --> 00:16:13,000

Some of the samples are here, little pieces of rock.

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00:16:13,000 --> 00:16:18,000

We've no great chunks of vitrified material, but here, for example, one with a bit of granite,

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00:16:18,000 --> 00:16:22,000

where a lot of material is soldered onto it in this position.

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00:16:22,000 --> 00:16:28,000

And this other one is one which has gone really glassy on the surface, the vitrified effects.

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00:16:28,000 --> 00:16:32,000

You see perhaps we move it round in the light that catches it on this face.

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00:16:36,000 --> 00:16:41,000

But the mystery of Tapo North and the other vitrified forts of Scotland

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00:16:41,000 --> 00:16:44,000

has survived the experiments of the modern archaeologists.

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00:16:44,000 --> 00:16:48,000

For all their expertise and the tons of wood they burnt,

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00:16:48,000 --> 00:16:55,000

the 20th century fort builders produced only a handful of melted rock and no real answers.

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00:16:55,000 --> 00:16:59,000

Beyond the conviction that the walls of this great castle must have been fused together

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00:16:59,000 --> 00:17:04,000

as a deliberate act by people who dragged forests to mountaintops like this,

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00:17:04,000 --> 00:17:10,000

there is nothing to explain why they set the hills alight two and a half thousand years ago.

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00:17:10,000 --> 00:17:17,000

This experiment suggests it would have taken half the trees in Scotland to vitrify all the forts.

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00:17:17,000 --> 00:17:19,000

So it would only deepen the mystery.

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00:17:19,000 --> 00:17:25,000

Such things as the crystal, skull and vitrified forts are intriguing and puzzling,

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00:17:25,000 --> 00:17:30,000

but they don't shake our preconceived ideas about history.

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00:17:30,000 --> 00:17:36,000

Yet there are other artefacts which do just that if they are what they seem to be.

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00:17:36,000 --> 00:17:41,000

This man, Dr. Anna Eggebrecht, director of a West German museum,

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00:17:41,000 --> 00:17:46,000

has no doubt at all that there is at least one astonishing example of ancient technology

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00:17:46,000 --> 00:17:49,000

which is 2,000 years ahead of its time.

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00:17:49,000 --> 00:17:53,000

He found it in an exhibition of treasures from ancient Iraq,

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00:17:53,000 --> 00:17:58,000

a pottery jar, a copper cylinder and an iron rod discovered in Baghdad.

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00:17:59,000 --> 00:18:02,000

He believes they are components of an electric battery

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00:18:02,000 --> 00:18:07,000

made 2,000 years before batteries were invented in the West.

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00:18:10,000 --> 00:18:17,000

I decided to check it and for that purpose we got made a replica.

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00:18:17,000 --> 00:18:25,000

Here you see the replica, the Baghdad battery, you see here a ceramic pot,

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00:18:25,000 --> 00:18:30,000

you see a copper cylinder and you see the iron rod here.

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00:18:30,000 --> 00:18:32,000

All replicas.

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00:18:33,000 --> 00:18:36,000

Now I have here a voltmeter

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00:18:39,000 --> 00:18:46,000

and this voltmeter shows on the scale a distance from 0, a quarter of a volt to half a volt here,

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00:18:46,000 --> 00:18:50,000

which we should reach by this battery.

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00:18:50,000 --> 00:18:56,000

For that purpose I combine now the voltmeter and the battery with these wires.

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00:18:56,000 --> 00:19:03,000

Now one wire is fixed to the rod, the other one is fixed to the copper cylinder.

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00:19:03,000 --> 00:19:13,000

To get it to work we need only some acid and for that purpose a bunch of grapes should help us and should do it.

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00:19:14,000 --> 00:19:21,000

Here I have the grapes and here a glass and in this I am putting now some of the grapes

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00:19:23,000 --> 00:19:31,000

and with a wooden stick I am pressing the juice out of it.

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00:19:34,000 --> 00:19:42,000

I hope I get enough so that we see on the scale how the voltmeter is working.

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00:19:43,000 --> 00:20:01,000

The grape acid battery delivers almost half a volt.

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00:20:01,000 --> 00:20:06,000

Could it have been used for gilding ancient treasure?

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00:20:06,000 --> 00:20:14,000

To show you that this can be done with this battery I have prepared an experiment.

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00:20:16,000 --> 00:20:25,000

The technique may have been to immerse a small silver statuette in a gold cyanide solution and electroplate it.

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00:20:30,000 --> 00:20:34,000

The implications for museum directors are chilling.

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00:20:34,000 --> 00:20:39,000

Treasures they always assumed to be solid gold may merely have been gilded.

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00:20:39,000 --> 00:20:47,000

And indeed in a matter of minutes the bottom half of this silver statuette acquires the sheen of gold.

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00:20:51,000 --> 00:20:58,000

This experiment shows that it is possible to do it and that also in ancient times it might have been possible

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00:20:58,000 --> 00:21:04,000

to have these batteries used for such gold plating processes.

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00:21:04,000 --> 00:21:13,000

If this is indeed an electric battery well one can only register astonishment because it is 2,000 years ahead of its time.

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00:21:13,000 --> 00:21:17,000

So it is possible we have completely misinterpreted its function.

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00:21:17,000 --> 00:21:21,000

It may be something quite different like a container for scrolls.

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00:21:22,000 --> 00:21:28,000

But from almost the same era there is a device about which there is now no dispute.

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00:21:28,000 --> 00:21:33,000

And here is a friend I have been bullying for 20 years to complete his researches on it.

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00:21:36,000 --> 00:21:39,000

Professor Derrick de Soyer Price of Yale University.

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00:21:41,000 --> 00:21:50,000

It was in Athens among a group of statues brought up in 1900 from a ship wrecked around the time of the birth of Christ that Price made his discovery.

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00:21:52,000 --> 00:21:57,000

The ship sank off the island of Antikythera near Crete.

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00:21:57,000 --> 00:22:02,000

Amongst the haul from the shipwreck were some fragments of corroded bronze.

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00:22:04,000 --> 00:22:07,000

They fascinated the professor when he came across them.

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00:22:07,000 --> 00:22:12,000

But he needed the help of the Greek Atomic Energy Commission to examine them.

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00:22:12,000 --> 00:22:18,000

There was a good colleague Dr. Karakalos who had been experimenting with gamma rays.

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00:22:18,000 --> 00:22:25,000

He was able to take the gamma radiograph of the main fragment in the museum.

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00:22:25,000 --> 00:22:29,000

And as soon as I saw it the effect was dramatic.

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00:22:29,000 --> 00:22:37,000

You could see that inside the fragment where it wasn't visible to the naked eye were all little gear wheels.

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00:22:37,000 --> 00:22:43,000

You could see the teeth plainly and you could even count teeth.

218

00:22:43,000 --> 00:23:01,000

This had such a big effect that there was hidden evidence that Dr. Karakalos was able to get permission and using much better X-ray equipment could make X-ray photographs of all the gear wheels in the interior of the machine.

219

00:23:01,000 --> 00:23:11,000

These photographs were so good that each gear could be located and even if we only had part of a gear we could actually count the teeth.

220

00:23:14,000 --> 00:23:20,000

See there is a wheel complete with all the gear teeth absolutely countable.

221

00:23:21,000 --> 00:23:27,000

From the X-rays Professor Price reconstructed the machine now known as the anti-kithera mechanism.

222

00:23:27,000 --> 00:23:33,000

It was a wooden box with bronze plates. A handle moves interconnected dials at the front and back.

223

00:23:33,000 --> 00:23:40,000

The innards of the mechanism are a complex mesh of cog wheels and gears until now concealed in the heart of the fragments.

224

00:23:41,000 --> 00:23:57,000

That wheel is the one you see here. More gearing at the back and you turn the handle and everything goes round all geared together in quite sophisticated club work.

225

00:23:57,000 --> 00:24:03,000

It was designed he believes as a computer to show the varying cycles of the moon, sun and planets.

226

00:24:03,000 --> 00:24:09,000

A device that by all previous knowledge simply ought not to have existed for another 2,000 years.

227

00:24:09,000 --> 00:24:13,000

Its maker had perfected a system of differential gearing.

228

00:24:13,000 --> 00:24:19,000

When Professor Price discovered this he had found a unique demonstration of the lost wisdom of the ancients.

229

00:24:19,000 --> 00:24:26,000

It is just incredible that the Greeks could invent this principle of the differential gear.

230

00:24:26,000 --> 00:24:43,000

It is so complicated that it contains in essence all of the line that led right through to modern

clockwork, to the computer and indeed to the machine age and everything that distinguishes our civilization from everything that went before.

231

00:24:43,000 --> 00:24:49,000

And the whole line began right here with this one unique relic.

232

00:24:50,000 --> 00:25:03,000

The Antikythera computer and the Baghdad battery, if indeed it is a battery, represent two of the great ifs of history because they are 2,000 years ahead of their time.

233

00:25:03,000 --> 00:25:12,000

If the societies that produced them had continued to develop their technologies by now it would be 4,000 AD.

234

00:25:13,000 --> 00:25:18,000

By this time we would not merely have sent a few men to the moon.

235

00:25:18,000 --> 00:25:23,000

We would have colonized all the stars visible to the naked eye.

236

00:25:42,000 --> 00:25:45,000

The search for the world's missing ape men