

# SHIPWRECKIN' IN THE BALTIC

PHOTO: ANDERS BOLVIN

“Magic”, says Johan Rönby, and passes his hand over the photographs, shimmering in green. Rönby, who this past year became a professor of marine archaeology, looks at the pictures of the most peculiar and most complete he has ever seen – and he is going to be able to be a part of the exploration of its history.

BY ANN-LOUISE MARTIN

“There is really no difference between archaeology and history”, he says in response to my question.

“We are studying the same things, but from different directions. A historian examines written sources, an archaeologist bases his or her studies on things, objects. It is as if one either reads someone’s diary to find out who he or she is, or one pokes around in the room, the boxes, the closet... the person reveals him- or herself in both cases, but in two different perspectives. What is exciting is when the two perspectives differ.”

What Johan Rönby would like most of all right now is to find written documentation for the Dutch 16<sup>th</sup> century fluit which lies 130 meters down somewhere in the Stockholm archipelago. It is a small three-masted vessel, only 25 meters long, of approximately the same type and year as Vasa, but almost completely preserved, intact down on the seabed.

On the seagreen images one sees rose-cut trim wooden figurines from the stern. The masts are upright, and the entire superstructure is intact.

“When the small underwater vehicle, remotely operated, looked into the captain’s cabin, it saw the sea chest next to an overturned table”, says Johan Rönby.

The Dutch regarded the Baltic Sea as their own sea during the time after the Hanseatic League. The frequent traffic of merchant vessels extended north to Stockholm, and on the basis of the customs registries of the time, it might be possible to identify the bulging little fluit, as Johan Rönby calls the Ghost Ship. This particular well-preserved wreck lies in international waters, so people are a little reluctant to talk about the exact position.

“There is no legal protection against exploitation of shipwrecks outside the national maritime borders, although the depth of the wreck itself protects it against pure amateurs”, he says.

**An international** working group has been formed which consists partly of scientists, and partly of those who found the ship, which will be controlled from Södertörn University and Johan Rönby’s department.

The marine archaeological work that was planned during the fall of 2008 has focused on carefully documenting the location of the ship and putting together exterior photos to form an entire picture of the ship. Small pieces of wood from the figures which have fallen

off will also be collected for dendrochronologic analysis, which can make possible a more precise age determination.

The reason why there are so many shipwrecks undamaged in the Baltic Sea is well known: the shipworm, *Teredo navalis*, with its immense hunger for wood, is the worst enemy of the wrecks, but the Baltic Sea water is not salty enough for the worm to survive. But this is not the only explanation.

The Baltic Sea itself is the reason why there are so many wrecks there – it is a lobate and shallow inland sea, with large deep caverns, it is difficult to navigate and is beset with rocks and reefs, and there is no tidal water pushing the remains of the wrecks around. In the eastern Baltic Sea, the shoreline is more level, sandy, and shallower than by the Swedish coast – here, the waves sweep in with greater force and alternately bury and uncover the ship remains in the sand.

“In addition”, says Rönby, “this sea has been the Nordic countries’ Mediterranean for 10,000 years; here, there are ships since the time of the Vikings still to be found. The Baltic Sea is the world’s best sea for marine archaeology!”

So it is not only in Sweden that people are interested in the wrecks of the Baltic Sea.

In Helsinki, Maija Matikka has the position of superintendent for the marine archaeological department of the National Board of Antiquities (Museiverket). The department consists of five people, herself included, who are expected to research and protect underwater archaeological finds.

“In our waters, 1,300 wrecks have been registered, the oldest is from the 13<sup>th</sup> century, but we record only those that have actually been seen. We do not deal with records of lost ships”, says Maija Matikka.

**1,300 wrecks – how can one possibly investigate them with five people?**

“We have very limited resources”, she admits. “Most of the finds are reported by skin divers, and for most of the wrecks we know nothing more than that they are where they are. Some of the finds have been studied by researchers afterwards, but not many.”

It is permitted to dive and go into a wreck, even if you are not a professional, but only if the vessels are less than 100 years old. Older finds may be seen but not touched; they are to be protected from curious ama-

teurs who should look but not touch, since they may not always know how to handle them, and who may even take them home rather than leave them to the National Board of Antiquities.

As an insurance policy for the future, the National Board of Antiquities established protective zones around four of the wrecks that one will be most tempted to recover the day the money rolls in. These wrecks are the St. Michael and Vrouw Maria in the outer archipelago of Nagu, the St. Nikolai outside Kotka, and the so-called Gråharunvraket in the Korpo archipelago.

Vrouw Maria, or Frau Maria, sank in Nagu in the autumn of 1771 during its journey from Amsterdam to St. Petersburg, with a cargo of zinc, fabrics, dyes, and sugar, but also Dutch oil paintings intended for Empress Catherine the Great of Russia – a real treasure ship! The wreck of the Frau Maria is well-preserved and stands upright at a depth of 40 meters – perhaps the best documented trading ship – but few objects have been raised.

The merchant vessel St. Michael sank 30 years earlier. It is at the same depth and is also upright. From this wreck, glass and appliances have been salvaged, and remains of the crew have also been found.

The oldest, the Gråharun Wreck, has been named after location of the find. It is in very poor condition and has been dated to the end of the 16<sup>th</sup> century.

“You can’t even see the shape of the hull”, says Maija Matikka. The ship is 16 meters long and clinker-built, and among the remains are pottery, casks and crucibles, suggesting that substances were melted down. But we do not know more than that.

The sandy, eastern Baltic coast is quite hard on shipwrecks. The force of the waves over the long and shallow beach zone is far greater than what people are accustomed to on the Swedish side. In general, it is much windier there, something to which any visitor to Helsinki can testify.

This means that many of the finds reported from the 1960s and ’70s are guaranteed to be reliable after 40 years.

“For that area, we sometimes get new information that only a few pieces remain. There, the sea has once again taken the wreck”, says Maija Matikka.

**If you received a huge amount of money, what would you want to do?**

**Viking ships lie at the bottom of the Baltic Sea. And then the Crusaders of the North set sail eastward.**

“I would want to do all those archaeological excavations, then build a museum and exhibit four or five of the merchant ships that went along the coast, with examples from several centuries.”

#### Vasa?

“No, the war – that you can keep in Sweden. I want to show everyday centuries-old trade in our inland sea”, says Maija Matikka.

**The man-of-war** Vasa has of course become a symbol of marine archaeology ever since she was lifted out of her sludge bed in 1956.

“The raising of the Vasa went so well because she was so powerfully constructed”, says Björn Varenius, newly appointed head of the Cultural Heritage Department of the Swedish National Maritime Museums and thus also responsible for the preservation of the Vasa.

He measures with his hands and describes the width of the boards and the enormous curves of the frame - built to cope with artillery shelling!

“She also had an inner planking, known as ceiling. In addition, the hull was held together by thousands of wooden nails – the iron bolts had for the most part rusted away. All of this made it possible for the fairly brutal salvage work to succeed, he continues.”

The preservation of the Vasa began a year after the salvage operation in 1961. After experimenting with various preservation chemicals, the choice of polyethylene glycol was made, which, in increasing concentrations over a long period, dried out the massive oak wood to an adequate level of moisture, around 10 percent.

“Pretty much the same thing would have been done today”, says Björn Varenius. “They took the right approach from the start.”

But in 2000, changes were discovered on the surface of the timber. This was a result of processes that were set in motion by the conservation efforts. Vasa had been on the bottom of the sea, where there was no oxygen in the water. Yet there were large quantities of bacteria and sulfur compounds that had crept into the wood. There was also rust from bolts and cannon balls. Up in the air, chemical processes were initiated. The preservative spread sulfur into the wood, together with the rust. Sulfur-eating bacteria got a foothold, and the result was an accumulation of sulfuric acid in the hull. It has been estimated that there was an equivalent of five metric tons of sulfuric acid in the wood, and acid is still being formed.

This is a problem that has now been sent along to researchers to solve. Should all the iron bolts be removed? Must Vasa be dismantled and treated plank by plank? Unacceptable solutions, of course, given Vasa’s role in the superb exhibition hall at Djurgården in Stockholm, completed in 1989.

This is a long-term project in a phase where Vasa, after all, is stable. The new climate control system has slowed the degradation slightly. The timber now has a consistent level of moisture and the chemicals in the wood don’t migrate as they did before.

Vasa will probably break down in the long run, but the museum’s mission is to ensure that the breakdown takes place as slowly as possible. The conservation work and research into the ship are of relevance internationally to all other kinds of marine archaeological conservation issues.

From his office in the newly renovated building behind the Maritime Museum in Stockholm, Björn Varenius has a view overlooking the Djurgårdsbrunn canal where the willows bend over the ducks and beaches. He has recently resigned his presidency of the Cultural Heritage Cooperation in the Baltic Sea States, which is responsible for gathering together the countries on the Baltic as well as other interested parties around their common cultural heritage. One of the areas that is particularly tricky is marine archaeology.

“Although actually not for legal reasons”, says Björn Varenius. “The legislation is in point of fact quite clear – on the other hand there are no supervisory agencies that see to it that the legislation is obeyed.”

So what was necessary was that someone – in this case Björn Varenius – come up with something that might eventually work, something that everyone could agree on in light of the lack of a supervisory authority: a code of conduct. It was presented in 2007 in Vilnius, at a Council of Europe meeting. In October 2008, the working group had come so far that a proposal on a code of conduct could be presented at a ministerial meeting in Riga, the Code of Good Practice, with the acronym COPACH. It is just one A4 page long, and it has now been handed over to the ministers. It consists of guidelines; it is not legally binding like a law, and the guidelines in many cases are connected to the practice that prevails in the case of archaeological finds on land.

Around the same time, UNESCO presented a more comprehensive proposal for a convention, which will come into force in 2009, on the protection of underwater cultural heritage sites. It is considerably more detailed, but, says Björn Varenius:

“Not many have ratified it. Lithuania has ratified it, Estonia will do so this year. But not any Scandinavian country.”

#### Why is this?

“Well, there are slightly different reasons, mostly technical. For example, if a country has ratified the agreement, it is obligated to take action against violations, but only against countries that also have ratified it, and it becomes quite complicated with different regulatory systems. What’s most difficult is getting the nations that have the greatest interests in the continental shelf to sign: in the Baltic Sea, Russia, and in the North Sea, Norway.”

#### So how did UNESCO respond to your “light” version?

“They liked it. A good start, they said, and the ministers had already said they liked the code at a meeting earlier in Bergen, when they first heard about the idea. Keep working on it, they said, and so we did, and now we have completed it; what remains is disseminating the knowledge of how we want the officials to think in terms of marine heritage finds”, says Björn Varenius.

But all these wrecks – 1,500 known wrecks in Finnish waters, 3,000 in Swedish waters – what should we do with them in the future? How many of them are interesting? Is the dream that each will be a new Vasa Museum? That would hardly be reasonable. There must be other ways of documenting and exhibiting the drowned archaeological treasures.

Even if it is primarily professional archaeologists - and diver-archaeologists – who can fully assimilate the knowledge on-site, there are vanishingly few of them.

## ”If it is 500 divers a year, we have to react – the overall effect causes damage.”

The proportion of interested divers is also small in the population at large. Moreover, it is not possible for tourist divers to get down to wrecks that are at depths greater than about 30 meters; at that point, one has to be a professional diver. So what sort of plans are there for the future?

“The shipwrecks of course have the same fundamental cultural value as the finds on land, and we are careful to document as many land finds as possible”, says Björn Varenius.

And then he reveals what has been under consideration: creating a dive park.

“We want to make the shipwrecks available, even those that are fragile. We want both to be able to exhibit them and protect them, and what we have discussed is the ‘Dalarö model’.”

Outside Dalarö in the Stockholm archipelago there are a number of wrecks in an area to which general access is now limited. There are also some wrecks that are now protected against skin diving, but which nonetheless are so wonderful that it would be a shame if no one could see them. It is these wrecks that people are hoping to be able to show in a dive park, to which “dry divers” would be invited.

“You do not need to know how to dive yourself, you can have a powerful experience of the finds beneath the surface by allowing an underwater robot to travel around and film them in real time. You need a licensed organization, where visitors from the deck of the boat, for a fee, get information about what they see. The organizers will provide both the archaeological background, and preferably also the historical background – that which identifies the wreck and what happened to it – before it met its final fate outside Dalarö.”

#### So, an underwater museum, where all you can do is see the objects on a film screen – will anyone want to pay for that?

“For most, for those who don’t dive, it is in fact the only option. Many wrecks are so deep that skin divers cannot get down to them anyway. And last but not least, even if you can dive, wind and drift, cloudy water and a dangerous position have made many dives useless. Such conditions cannot be overcome by a diver, but the little robot, Sjöugglan [Sea Owl], can handle them”, says Björn Varenius.

But the diving park would also give access to divers, and here, one needs to strike the right balance. It is a little too easy to establish a ban on diving. Interest should instead be encouraged by clearly indicating what is OK and what is not OK. “The five hundred hands” is a museum mantra:



“The wrecks are sensitive to the touch because bacteria and natural processes break down the wood surface. If one person dives down, it’s not a problem, perhaps not even if there are 50 divers who have run their hands over the hull. But if it is 500 divers a year, we have to react – the overall effect causes damage.”

In addition, if everyone lifts up a peg or a block, if only to look at it, and puts it down just a little bit further from where they picked it up, the possibility for archaeologist to interpret the finds is decreased. Archaeologists are good at interpreting natural decay, but if the pieces are not in the right places, it can be difficult to make everything fit together.

Exactly how a diving park should be designed so as to welcome both dry and wet visitors – we do not yet quite know. Much remains to be done – licensing issues, organizing skills, and purely legal matters – but this is still how it will be done in the future.

“Yes, since it is doubtful whether we will ever see another salvage operation”, Björn Varenius says. “No new Vasa Museum; what we have is good enough and has made a great contribution to knowledge. The idea of another Vasa Museum at times of course suggests itself, but with today’s technology for documentation under the surface, underwater conservation is the first choice.”

**Again: 1,500 Finnish** and 3,000 Swedish wrecks are known to exist, and the same proportionate number in Estonian, Latvian, Lithuanian, Polish, and Russian waters – in the face of this abundance, it was decided in all the countries to pick out the one hundred most valuable shipwrecks in the Baltic Sea in a “one hundred list”. This effort, known as the Rutilus Project, was begun in 2003 and has now been completed. The “one hundred list” is basically the linchpin of future diving parks across the Baltic Sea.

Åland has its wrecks in a separate list – they are not in the Finnish list. Why is this the case? I ask antiquary Markus Lindholm, who is responsible for the wrecks of the province.

“It was mostly a coincidence. At a meeting in Wismar when we made up the list, we Ålanders sat together by ourselves and wrote up our list, thus there were two separate lists. And those on the other side of Skiftet, the waters between Åland and Finland’s mainland, have nothing to do with our wrecks; Åland is autonomous, and we don’t concern ourselves so much with shipwrecks on the Finnish side.”

The provincial administration of Åland has very strict legislation on wreck diving, and diving in general, it turns out. It is basically prohibited to dive using diving equipment in Åland waters without permission, and without reporting your activities, before and after diving.

The notification requirement also applies to commercial diving, not just skin divers, says Markus Lindholm.



**Who talks about Estonia? The ship, that is.**

“With this, we have full knowledge over who the diver was, and we can see that looting of wrecks is almost unknown in our waters. But we nonetheless have generous rules. In 2006, there were 2,300 dives on the wreck Plus, an iron bark outside Mariehamn, one of the two ships that sank in the storm of December 14, 1933.”

Individual objects have been salvaged from that wreck, such as a ship’s clock and a sextant in its box. They can now be seen at Mariehamn’s maritime museum, which also is the owner of the wreck.

The Åland archipelago is shallow and difficult to navigate, and trade has always been lively, partly between the islands, and partly with the mainland. Here there are wrecks of peasant boats and merchant ships from the 16<sup>th</sup>, 17<sup>th</sup>, and 18<sup>th</sup> centuries that have perished in the reef-laced, rocky waters, and these have been the objects of study of Åland’s marine ecology research. In contrast, the large shipwrecks often lie at such great depths that divers cannot reach them.

#### But what do people in Åland think about the idea of making wrecks and underwater life available in dive parks?

“Politically, the reception has been somewhat tepid. Objections have concerned how it could be funded, managed, and controlled. I, too, realized that certain wrecks would have to be sacrificed for interested divers”, Markus Lindholm admits.

Now they are referred to commercial or non-profit diving corporations. There are no plans for dry diving.

**Johan Rönny,** the newly appointed professor at Södertörn, is by no means equally opposed to the idea of displaying the underwater world. The shipwrecks belong to our history, and the archaeologist is in a position to document the objects so that the human life connected to the objects can be made manifest. Johan Rönny tells of the wreck that perished outside Ingarö in the Stockholm archipelago, which proved to be the Swedish king Gustav Vasa’s state-of-the-art carvel-built craft from the 16th century.

“When we later saw this wreck, it was a tiny little boat with the simplest of appointments – primitive indeed! One had then a different picture of the great king and what his reality actually looked like.”

The boats were not badly built showpieces, as you might think when you look at the man-of-war Vasa.

“They were very seaworthy”, says Johan Rönny. “We must recall that most of them survived. Accidents happened, but they were caused more by wind and icing than human factors or negligent construction. And the traffic was extensive. The Baltic Sea trade constituted the backbone of the Dutch empire.”

A successful ship might come here several times a year with salt, clothes, steel wire, lemons, carrots, and other such items that couldn’t be found here. They went up to Kvarken, at the same level as Stockholm

and Turku, and brought home timber and iron and calcium. The Dutch became rich, but their mentality and their reformed religion didn’t quite allow them to admit it.

“There was a duality which manifested itself in a tradition of stories of doom”, explains Johan Rönny. “‘Embarrassment of the riches’, as it is often known. The Dutch excelled at horrifying stories of shipwrecks and ghost stories in order not to feel too safe. Stories about wandering ships, about how God gives and God takes – that was the fare below deck in the evenings.”

#### What should one do in light of the fact that the wrecked ships are actually burial grounds?

“Many young students believe that we should treat them as tombs. I think that’s silly. As an archaeologist, you don’t violate anyone. Of course there are ethical limits. The ship Estonia is so close to us in time that there are relatives or others who knew the victims.”

Johan Rönny’s latest darling is certainly on the right side of that temporal boundary: The Ghost Ship, the location of which we are not permitted to know. What can be done with a wreck that is at a depth of 130 meters?

“It should be documented and its measurements determined on-site by a consortium. There is a production company, a company knowledgeable about marine measurement techniques, and then we researchers. To begin with, there will be a production for National Geographic, a film that will be shown by Sveriges Television (SVT) in the fall of 2009. But we will also send divers down to examine the wreck a little more closely. One can dive using a technique known as saturation diving: it is akin to diving in a diving bell. Not everyone can do this, it requires special training, which I unfortunately do not have”, Johan Rönny sighs.

#### And then: it will be salvaged?

“No, not salvaged. We would like to take up the loose decorative figurines, which are below the stern, but we don’t know whether we can take care of them properly. What would I want to do? If it were up to me, it would be pulled up into a more shallow depth, perhaps 15 meters, and placed in a quiet cove somewhere. There, it could be protected and examined just as carefully as that unique ship is worth”, concludes Johan Rönny.

Author **Ann-Louise Martin** was a producer with the National Swedish Radio (Sveriges Radio), Science and Art Department, for 25 years, and, in BW 1:2008, reported on organ-trafficking. Received an award from the Royal Swedish Academy of Agriculture and Forestry.



An ROV (Remotely Operated Vehicle) was used in the examination of the Ghost Ship (left). Ornamented clay pipe (middle). Marine archaeologist from Södertörn University diving near the Schooner Fäderneslandet (The Fatherland) from 1845 (right).

**At one time, oceangoing vessels departed from Åland. Then the island became a tourist paradise.**