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References, Further Reading and Travel Tips

The Troll Child: 54,000 Years Ago

The chapter entitled ‘The Troll Child’ is the product of my own imagination. However, it is based as far as possible on genuine research data concerning our contacts with Neanderthals. References to this research are provided in Chapters 2 and 4.

I decided early on, at the recommendation of the Israeli archaeologist Ofer Bar-Yosef, to set the scene in Galilee. When I started writing, there was no definite proof that anatomically modern people and Neanderthals had coexisted in Galilee during the period in question. It was not until January 2015, when my manuscript was already finished, that such proof was published. It took the form of a description by Israeli archaeologists of the cranium of an anatomically modern human found in Manot cave and dated at about 55,000 years.

As far as researchers can judge from the shape of the Manot cranium, the individual in question was not the result of hybridisation between Neanderthals and modern humans. This suggests that interbreeding took place somewhat later – one of the reasons for my choice of the subtitle ‘the first 54,000 years’.

The botanist Mariette Manktelow – who is, among other things, an expert on biblical flora – explained to me what the local vegetation may have looked like at different times of the year. Why do I think it was the Troll Child’s father who was a Neanderthal, not his mother? Though that is speculative, there are DNA findings that support such guesswork. No one alive today has been found to bear mitochondria from Neanderthal ancestors. In other words, there seems to be no unbroken matrilineal link between the Neanderthals and us. Moreover, there is less genetic material from Neanderthals in our X chromosomes than in the rest of our DNA. One conceivable explanation for this is that ‘troll children’ may have had Neanderthal fathers, while their mothers were modern humans.

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Neanderthals in Leipzig

Leipzig is a pleasant city. I would recommend readers who may wish to visit other places described in this book, such as the Museum of Prehistory in Halle, the Goseck solar observatory and the Nebra Ark (Arche Nebra), to use it as a base.

Take the opportunity to dine at Bayerischer Bahnhof, the former railway station turned brewery and beer garden. If you can cope with rather inconsistent standards and a steep staircase, Antikhotel Völkerschlachtdenkmal is an experience; affordable, it offers excellent breakfasts, cycles for hire and fine antique furnishings. However, it is some way out of the city centre.

While the Max Planck Institute for Evolutionary Anthropology is not generally open to the public, its Zen-inspired architecture can be viewed from the exterior and the reception area.

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The Flute Players

I strongly recommend going on an Ice Age safari to the Swabian uplands to view the world's oldest known musical instruments and the world's oldest figurative art. However, it is worth bearing in mind that Germany is a highly decentralised federal republic without any central authority to make life easier for Ice Age tourists.

The most important finds are dispersed; some can be found at the museum in Ulm, others at the castle museum in Tübingen and in the little town of Blaubeuren. The small museum in Blaubeuren is particularly pleasant, with a special room where you can listen to the flutes, and an exhibition that shows what the flute players may have looked like, and how their gear differed from that of the Neanderthals.

It is only a few kilometres from Blaubeuren to the caves at Geißenklösterle and Hohle Fels. From Ulm, you can take the train to Schelklingen, after which it is no more than a half-hour walk. The bus from Blaubeuren to Ehingen takes you even closer; get off at the bus stop marked 'Hohle Fels'.

Geißenklösterle can only be viewed from the outside, and you have to scale a steep slope to reach it. Hohle Fels, however, is more accessible, and it is sometimes open to the public. For further information, it is best to send an email in advance to Erwin Hagggenmüller (e.hagggenmueller@t-online.de), Dieter Frey (dodifrey@web.de) or info@schelklingen.de.

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First on the Scene in Europe

I received a great deal of help on the Kostenki site from the Russian archaeologist Andrei Sinitsyn. John F. Hoffecker, an American expert on eastern European archaeology, was also very helpful. Unfortunately, I have not yet been able to visit either the local museum in Kostenki or the Kunstkamera (the Peter the Great Museum of Anthropology and Ethnography) in St Petersburg, where the photo of the model was taken.

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Mammoths in Brno

Brno, just over an hour by train from Vienna, is definitely worth a visit. Anthropos is among Europe's more informative prehistory museums, and a visit to the monastery that was once the workplace of Gregor Mendel, the father of genetics, is surely part of our general education now that DNA technology is developing at such a dramatic rate.

And don't miss Brno's main square, where a large farmers' market is held. This is particularly inviting in September, with cups of newly made wine on sale at market stalls.

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Anthropos Museum, Brno. Visited in September 2013.

Cro-Magnon

If you choose to visit just one of the destinations described in this book, make it Les-Eyzies-de-Tayac. The French state and the local authorities have done everything they can here to pool their resources and make sure Ice Age tourists get the most out of their visit. Many of the sites are just 10 minutes' walk apart.

It is best to avoid the high season in July and August, when the hotels are full and the narrow streets heaving with cars.

The train journey from Bordeaux takes about three hours. It is about five minutes' walk from the little station to Cro-Magnon, and just a few minutes more to Abri Pataud, which has a small museum of its own. The big National Museum of Prehistory, the *Musée National de Préhistoire*, is a few hundred metres further on. Tremendously ambitious, the museum places considerable demands

on the visitor. It is advisable to go on a guided tour, which will put everything into context.

The museum's contact details are available on its homepage. It is open throughout the week in the high season; during the rest of the year it closes on Tuesdays.

The expert guides at the *Musée National de Préhistoire*, such as Florence Landais, are responsible for coordinating most things to do with prehistory in the region. However, this does not apply to Abri Pataud, which is covered by another state organisation, or to Rouffignac, which is privately owned.

The *Pôle International de la Préhistoire* (International Prehistory Centre) occupies a large new building near the museum. Its facilities include an extensive collection of books, magazines and films, which visitors can use free of charge. The centre is closed on Saturdays.

Font-de-Gaume is about half an hour on foot from Les Eyzies. Tickets can be purchased on the spot on the same day as the tour. It's best to be there by 9.30 a.m., when they open! In the same direction, but a little further away, are Les Combarelles and Abri du Cap Blanc (the latter can be reached by bike or car, rather than on foot).

Abri du Poisson, Laugerie Haute and some other sites are about half an hour's walk from Les Eyzies in the other direction.

The simplest way to get to Rouffignac is to hire a car.

The tourist office (*office de tourisme*) in Les Eyzies can put visitors in touch with car rental firms and hire out cycles.

The Department of Geological Sciences at the University of Stockholm was very helpful when I was planning my trip to Les Eyzies. Barbara Wohlfarth and Otto Hermelin used to organise trips there as part of the introductory course on human evolution. Sadly, the course is no longer running.

It was on Barbara Wohlfarth's advice that I decided against visiting the most famous cave in the region, Lascaux. The public can no longer enter the cave, but have to make do with copies of the paintings on plastic backgrounds. Even so, it seems there are too many visitors for comfort.

The cave at Pech Merle, about two hours by car from Les Eyzies, is said to be extraordinary. Unfortunately, I was unable to fit in a visit.

Staying at the Cro-Magnon guesthouse was interesting and enjoyable, but rather expensive. More affordable alternatives are

chalets at the local campsite or the Auberge de Musée. I ate best at Hôtel Les Glycines, and the Café-Brasserie de la Mairie at the foot of the big prehistory museum also served tasty dishes at affordable prices.

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The First Dog

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Doggerland

Research into Doggerland is very recent, and there is surprisingly little information available. For those who want to know more, I can only recommend Vincent Gaffney's book and a few display cases at the Danish National Museum in Copenhagen.

This museum is the best resource in Scandinavia for anyone wanting to learn about the Palaeolithic in northern Europe (as well as the Neolithic period, the Bronze Age and the Iron Age). Moreover, entrance is free, and the area around the museum has some pleasant restaurants serving smørrebrød, the typical Danish open sandwiches.

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The Ice Age Ends

The idea that people witnessed the sudden appearance of a huge waterfall to the north of Mount Billingen and the time when the water in the Öresund Strait ran dry is, of course, an invention. We cannot know whether there were any eyewitnesses. I borrowed most of the fictional description from Professor Svante Björck of Lund University, Sweden's main expert on these geological events.

The finds from Huseby Klev are on show in a small local museum at Orust, which is open for a few weeks in summer and by prior arrangement.

The island of Stora Karlsö is a wonderful place to visit, especially at the beginning of summer, when the orchids are in bloom and the common murre (guillemot) chicks are leaping from the cliffs. There are daily boat trips until the end of August. The Stora Förvar cave, near the harbour, is freely accessible to the public.

The Barum woman is exhibited at the Swedish History Museum in Stockholm. In addition to her skeleton, there is a whole room full of information about the environment in which she lived.

Apart from these sites, the best and most complete information about the Scandinavian Stone Age is to be found at the Danish National Museum in Copenhagen.

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Dark Skin, Blue Eyes

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- Hallgren, Fredrik. Interview, March 2014.
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- Swedish History Museum, Stockholm. Visited several times between 2013 and 2015.

Climate and Forests

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Am I a Sami?

At the very last moment, just before it was time to hand in the manuscript, I decided to take the night train up to the Sami Museum, Ájtte, in Jokkmokk. I am very glad I did. Ájtte is an outstandingly good museum and an important part of Sweden's history.

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Pottery Makes its Appearance

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Dolbunova, Ekaterina. Lecture, September 2013. Email, September 2013.

Hallgren, F. Interview, March 2014.

The Farmers Arrive

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Jennbert, Kristina. Interview, February 2014.

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Family Tree DNA. Personal analysis, 2013.

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Syria

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The Boat to Cyprus

Exploring the origins of agriculture in depth could scarcely be made any simpler or more comfortable. Tourism being Cyprus's main economic activity, there are hotels, restaurants and museums galore. You can get around fairly easily using ordinary buses, and where they are lacking there are taxis, cycles for hire and rental cars. The most informative destination as regards early agriculture is the World Heritage Site of Khirokitia, near the A1 national highway a few dozen kilometres west of Larnaca. A regular bus service will take you nearly all the way to the site.

The Cyprus Museum in the capital, Nicosia, is also quite informative about the first farmers. Look at the display cabinets in the first room.

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- Häggman, Sofia. Interview, May 2014.
- Johansson, Carolin. Email, December 2014.
- McCartney, Carole. Interview and field visit, April 2014.
- Mühlenbock, Christian. Conversation, May 2015.
- Vigne, Jean-Denis. Email, April 2014.
- Visit to Cyprus, April 2014.

The First Beer

There are organised tours of Göbekli Tepe for tourists.

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- Zeder, M. A. (2011). The origins of agriculture in the Near East. *Current Anthropology*, 52 (S4), doi:10.1086/659307
- Dietrich, Oliver. Email, October 2014.
- McCartney, Carole. Interview and field visit, March 2014.
- Vigne, Jean-Denis. Email, March 2014.

The Farmers' Westward Voyages

- Badro, D. A., Douaihy, B., Haber, M., Youhanna, S. C., Salloum, A., Ghassibe-Sabbagh, M., et al. (2013). Y-chromosome and mtDNA genetics reveal significant contrasts in affinities of modern Middle Eastern populations with European and African populations. *PLOS ONE*, 8 (1), 1–11. doi:10.1371/journal.pone.0054616
- Bengtson, J. D. (2009). Basque and the other Mediterranean languages. *Mother Tongue*, 14, 157–175.
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- McCartney, Carole. Field visit and interview, March 2014.
- Museum of Cyprus, Nicosia. Visited in 2014.
- Sotira Teppes. Visited in March 2014.

The Homes Built on the Graves of the Dead

It is possible to visit Çatalhöyük.

- Hodder, I. (2006). *Çatalhöyük: the Leopard's tale: revealing the mysteries of Turkey's ancient 'town'*. London: Thames & Hudson.
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- Paschou, P., Drineas, P., Yannaki, E., Razou, A., Kanaki, K., Tsetsos, F., et al. (2014). Maritime route of colonization of Europe. *Proceedings of the National Academy of Sciences of the United States of America*, 111 (25), 9211–9216. doi:10.1073/pnas.1320811111
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- Berggren, Å. Email, March 2015.
- Hodder, Ian. Email, May 2014 and December 2014.
- Litt, Thomas. Email, June 2014.
- Özdoğan, Mehmet. Email, May 2014.

Clashes in Pilsen and Mainz

- Bánffy, E. (2010). *Early Neolithic Settlement and Burials at Alsónyék-Bataszek*, Krców.
- Bollongino, R., Nehlich, O., Richards, M., Orschiedt, J., Thomas, M., Sell, C., et al. (2013). 2000 years of parallel societies in Stone Age Central Europe. *Science* 342, (6157), 479–481. doi:10.1126/science.1245049
- Brandt, G., Haak, W., Adler, C., Roth, C., Szécsényi-Nagy, A., Karimnia, S., et al. (2013). Ancient DNA reveals key stages in the formation

- of central European mitochondrial genetic diversity. *Science*, 342 (6155), 257–261. doi:10.1126/science.1241844
- Fernández, E., Pérez-Pérez, A., Gamba, C., Prats, E., Cuesta, P., Anfruns, J., et al. (2014). Ancient DNA analysis of 8000 B.C. Near Eastern farmers supports an Early Neolithic pioneer maritime colonization of mainland Europe through Cyprus and the Aegean Islands. *PLOS Genetics*, 10 (6), 1–16. doi:10.1371/journal.pgen.1004401
- Alt, Kurt. Interview, October 2013.
- Banffy, Eszter. Email, May 2014.
- Brandt, Guido. Interview, October 2013.
- Burger, Joachim. Interview, October 2013.
- European Association for Archaeology. Annual meeting, September 2013.

Sowing and Sunrise

The State Museum of Prehistory (Landesmuseum für Vorgeschichte) in Halle is one of the best museums of prehistory in the whole of Europe, comparable only with Les-Eyzies-de-Tayac and the Danish National Museum in Copenhagen.

Unfortunately, the city of Halle is not equally agreeable. I recommend staying overnight in Berlin, or, even better, in Leipzig, which is only half an hour's journey by local train. From there, you can visit the Goseck solar observatory (and the Nebra Ark, described in 'The Nebra sky disc in Halle'). It is possible to reach Goseck, albeit rather circuitously, by local train and bus, but I hired a car to get there quickly and safely.

To experience the true magic of the solar observatory, you need to try and arrange to be there at sunrise or sunset on a clear day.

- Zich, Bernhard. Interview, September 2013.
- Archaeological Museum, Cracow. Visited in October 2013.
- Goseck. Visited in November 2014.
- State Museum of Prehistory (Landesmuseum für Vorgeschichte), Halle. Visited in September 2013 and November 2014.

Farmers Arrive in Skåne

The best place to study the arrival of agriculture in Scandinavia is the Danish National Museum in Copenhagen, the workplace of archaeologist Lasse Sørensen.

His new three-volume doctoral thesis complements the new DNA findings well, for readers who wish to study the subject in some depth.

- Jennbert, K. (1984). *Den produktiva gåvan: tradition och innovation i Sydskandinavien för omkring 5300 år sedan*. Diss. Lund: University of Bonn.
- Skoglund, P., Malmström, H., Omrak, A., Raghavan, M., Valdiosera, C., Günther, T., et al. (2014). Genomic diversity and admixture differs for Stone-Age Scandinavian foragers and farmers. *Science*, 344 (6185), 747–750. doi:10.1126/science.1253448
- Sørensen, L. & Karg, S. (2012). The expansion of agrarian societies towards the North – new evidence for agriculture during the Mesolithic/Neolithic transition in Southern Scandinavia. *Journal of Archaeological Science*, doi:10.1016/j.jas.2012.08.042
- Sørensen, L. (2014). *From hunter to farmer in Northern Europe. Vol. 1–3: migration and adaptation during the Neolithic and Bronze Age*. Diss. Copenhagen: Oxford.
- Andersson, Magnus. Interview, February 2014.
- Broström, Anna. Interview, February 2014.
- Jennbert, Kristina. Interview, February 2014.
- Magnell, Ola. Interview, February 2014.

Ötzi the Iceman

I visited the South Tyrol Museum of Archaeology in Bolzano (Bozen) during a skiing holiday a few years ago. The extra train journey, which took a few hours, proved well worth the effort. Ötzi, the well-preserved ice mummy, along with his clothes and his gear, provides insights into the prehistoric past that it would be difficult to come by in any other way.

- DeSalle, R. & Grimaldi, D. (1994). Very old DNA. *Current Opinion in Genetics & Development*, 4, 810–815. doi:10.1016/0959-437x(94)90064-7
- Ermini, L., Olivieri, C., Luciani, S., Marota, I., Rollo, F., Rizzi, E., et al. (2008). Complete mitochondrial genome sequence of the Tyrolean Iceman. *Current Biology*, 18 (21), 1687–1693. doi:10.1016/j.cub.2008.09.028
- Keller, A., Graefen, A., Ball, M., Matzas, M., Boisguerin, V., Maixner, F., et al. (2012). New insights into the Tyrolean Iceman's origin and phenotype as inferred by whole-genome sequencing. *Nature Communications*, 3, 698. doi:10.1038/ncomms1701

- Müller, W., Fricke, H., Halliday, A., McCulloch, M., & Wartho, J. (2003). Origin and migration of the Alpine Iceman. *Science*, 302 (5646), 862–866.
- Sikora, M., Carpenter, M. L., Moreno-Estrada, A., Henn, B. M., Underhill, P. A., Sánchez-Quinto, F., et al. (2014). Population genomic analysis of ancient and modern genomes yields new insights into the genetic ancestry of the Tyrolean Iceman and the genetic structure of Europe. *PLOS Genetics*, 10 (5), 1–12. doi:10.1371/journal.pgen.1004353
- Spindler, K. (2000). *Mannen i isen*. Stockholm: Natur & Kultur.
- Sjövold, Torstein. Email, March 2015.
- South Tyrol Museum of Archaeology, Bolzano (Bozen). Visited in December 2009.

The Falbygden Area

The Falbygden Museum in Falköping is small, but pleasant and interesting. Exhibits include one of the world's oldest dogs and the mysterious Raspberry Girl. A replica of a stone burial place gives a good idea of how they were constructed.

The 'prehistoric village' at Ekehagen (Ekehagens forntidsby) brings history to life for both children and adults.

I would recommend that visitors to the Falbygden region fit in a visit to 'naturum Hornborgasjön', an information centre at Lake Hornborga, which provides information not only about cranes and other birdlife, but also about the first inhabitants of Sweden during the Palaeolithic period.

See Chapters 14 and 22. In addition, the following may be of interest:

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DNA Sequences Provide Links with the East

It was tricky writing the chapter about DNA and the arrival in western Europe of the herders from the steppe, as this is an area of cutting-edge research. The target kept on advancing rapidly throughout the time that I was writing the book.

The groundbreaking Boston study by Lazaridis et al. was only published on *Nature's* site in September 2014. Fortunately, I was able to read a preliminary version several months in advance.

The most decisive study, which amounts to a revision of European history, is Haak et al., also from Boston. This was published in *Nature* in March 2015, by which time I had already submitted my manuscript. Still later, in June 2015, the rival team from Copenhagen and Gothenburg was able to confirm the scenario of the dispersal of the Indo-European languages through migration from the steppes in the east. Batini et al. (May 2015) shows, on the basis of Y chromosomes from men living today, that two thirds of the patrilineages in Europe can be traced back to these Bronze Age clans.

So a number of competing research teams that are world leaders in their field have now shown how the population of Europe changed at the dawn of the Bronze Age.

The State Museum of Prehistory (Landesmuseum für Vorgeschichte) in Halle an der Saale, Germany, is another excellent source of information about this period.

Both James P. Mallory's *In Search of Indo-European Languages* and David W. Anthony's *The Horse, the Wheel, and Language* are worth reading. However, even though many of Mallory's and Anthony's hypotheses have proven to be correct, their books are now slightly outdated in the light of the latest DNA findings.

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Bell Beakers, Celts and Stonehenge

I had the privilege of touring Stonehenge with Pat Shelley, a knowledgeable guide from Salisbury and Stonehenge Guided Tours.

Several times a year he leads special tours that start at sunrise and continue till lunchtime. You can actually go inside the stone circles, which visitors are not normally allowed to do. One exception is at midsummer, when the public are allowed right up to the monument – but then the area is far too crowded. Pat Shelley's special tours start in the early morning from nearby Salisbury. For practical reasons, it may be advisable to spend the night there; this also has the advantage of allowing some time to visit Salisbury Museum, where the Amesbury Archer is displayed.

It is best not to visit Stonehenge in the high season, if you have any choice in the matter. Spring, autumn and winter are better. If

you visit in winter, don't make my mistake of not dressing warmly enough!

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The Nebra Sky Disc in Halle

The Nebra sky disc is the main attraction at the excellent State Museum of Prehistory (Landesmuseum für Vorgeschichte) in Halle an der Saale (see previous chapters).

There is also a good exhibition at a purpose-built centre near the site of the find. The Nebra Ark (Arche Nebra) is just outside

the town of Nebra. The nearest train station is at Wangen; the nearest bus stop is marked Großwangen.

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- Arche Nebra, visitors' centre. Visited in November 2014.
- State Museum of Prehistory (Landesmuseum für Vorgeschichte), Halle. Visited in September 2013 and November 2014.
- Vitlycke Museum, Tanum. Visited in August 2014.

The Rock Engravers

I strongly recommend a visit to the Vitlycke Museum of Rock Carvings (Hällristningsmuseet) at Vitlycke near Tanumshede, Bohuslän. Some of the most remarkable petroglyphs are to be found just a few minutes' walk from the museum. It's best to set aside a whole day, so as to have enough time to walk, cycle or drive around the area and look at several rock engravings. The museum

hires out bicycles. It takes between two and three hours by coach and/or train to get there from Gothenburg. The final stretch is between one and five kilometres ($\frac{2}{3}$ –3 miles) on foot, depending on your connection.

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Iron and the Plague

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Am I a Viking?

The Swedish History Museum in Stockholm houses a major exhibition on the Vikings. Birka, a former Viking settlement on the island of Björkö in Lake Mälaren, is a very popular tourist destination.

The Danish National Museum in Copenhagen is also strong on this period. The Viking Ship Museum in Oslo (Vikingskipshuset) and its counterpart in Roskilde, Denmark (Vikingskibsmuseet) are other places of pilgrimage for Viking enthusiasts.

The books of Richard Hall and Jean Manco portray the period from a British perspective. I strongly recommend the new book by the Yale professor Anders Winroth, who was kind enough to check the facts in the Viking chapter of this book.

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- Swedish History Museum, Stockholm. Visited several times in 2014.
- Urshult. Visited in the summer of 2013.

The Mothers

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Andersson, Dagmar. Conversation, November 2014.

Juås, Birgitta. Conversation, July 2014.

Lindgren, K. Conversation, July 2012.

Olausson, Peter. Interview, July 2014.

Documents from Glava outdoor museum (*hembygdsgrård*).

Further information has come to light since this book was written. If you think you could be related to me in the maternal line, please contact me via my homepage at karinbojs.se for more details.

The Legacy of Hitler and Stalin

Abecasis, G., Auton, A., Brooks, L. D., DePristo, M.A., et al. (2012). An integrated map of genetic variation from 1,092 human genomes. *Nature*, 491 (7422), 56–65. doi:10.1038/nature11632

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Vavilov Institute, St Petersburg. Visited in September 2010.

The Tree and the Spring

This chapter is a summary of the book's overall findings, together with my personal reflections. References to scientific and academic works are given for previous chapters. The legend of Saint Botvid – like all such legends – should be taken with a large pinch of salt. However, he is mentioned in a number of documents, including the Vallentuna Calendar or *Kalendarium Vallentunense* from the 1190s. More information about the church building (in Swedish) can be found on Botkyrka parish's homepage (www.visitbotkyrka.se).

Questions and Answers about DNA

If you are interested in a book containing more technical information about the use of DNA in researching family history, I recommend you read Magnus Bäckmark's *Genvägar*. It is important to get hold of the latest edition, as this kind of information dates quickly.

In 2015, the Swedish Association of Family History Researchers (Sveriges släktforskarförbund) also published a basic instruction manual by the expert Peter Sjölund, *Släktforska med DNA*.

Bäckmark, M. (2013). *Genvägar: praktisk handledning till DNA-jämförelse i släktforskning* (2nd, augmented edition). Åkersberga: Gröna stubben.

The International Society of Genetic Genealogy has plenty of useful information on its website: www.isogg.org