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Human population biology
from the present to the Mesolithic

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Archaeological retrospect on physical anthropology in Iceland

Vilhjálmur Örn Vilhjálmsson

Introduction

The origin of the Icelanders has been a very popular subject for research in Iceland. For about a century historians, literary scholars and archaeologists have debated this issue. In this century it has also been one of the most popular topics for Icelandic as well as some foreign anthropologists.

Most scholars agree on the time for the first settlement in Iceland (*the Landnám*). The first settlers are believed to have come to Iceland in the second half of the 9th century. On the other hand, the origin of the first settlers has been, and is still, a matter of much doubt and many debates. The main issue of the debate has been whether the modern Icelanders mainly descended from a Norse or a Celtic (Irish/Scottish) population or a mixture of both. By studying and interpreting written sources, historians and literary scholars have reached quite different conclusions concerning this division between the Norse and the Celts.

The interest of the Icelanders in their own origin is partly the result of a lack of definite information on that matter in written sources. But more important is the fact that this interest is clearly connected with the search for national identity by the Icelandic people, during and even after their struggle for political independence. Their racial origin did not become a question until the 19th century, when political nationalism is first noted in Iceland (Karlsson 1987). Earlier, there were simply no social or historical factors to promote such an interest.

The literary tradition

Before any anthropological studies were made on living Icelanders as well as on earlier populations, the only information on their origin, apart from archaeological evidence, was the information obtained from written sources. Only a few sources, such as The Book of Settlements, *Landnámabók* and The Book of the Icelanders, *Islendingabók*, as well as some of the well-known Icelandic sagas yield any information on the origin (IF I 1968). The information these sources give has been used rather uncritically. Until recently it was quite common to regard information mentioned concerning the origin of the first settlers as consistent with the truth.

The Book of the Settlements and the Book of Icelanders which were composed

in the first half of the 12th century (but only remain in much later and possibly revised transcripts), as well as information in sagas, are now commonly used with more care and criticism. Most modern historians are now convinced that these sources reflect the society of the time in which they were composed or transcribed rather than the time which they are describing. They might include some essence of truth about some of the first settlers and their origin, but they were not written exclusively to give information on the origin and the race of the settlers. That was not a matter of interest until the 19th century.

In written sources we read mainly about Norwegian settlers, from all parts of Norway, but mainly from the southwestern districts. There is also mention of a few people from the northern and western British Isles. In a few cases we hear about mixed marriages between the Norse inhabitants and the original inhabitants of Ireland and the northern British Isles. Swedes, Lapps and Danes are also mentioned. The Book of Settlements was mainly composed as documentary proof of the land ownership of the leading families of the 12th century (Rafnsson 1974, 1977). The genealogies they contain were first and foremost written to prove ownership of land and resources as far back in time as possible for these families. Therefore it seems rather unsound when these written sources are uncritically accepted and the relatively sparse definite evidence for the origins of the settlers is used as a basis for a serious and even statistical estimate of the racial composition of the earliest population of Iceland. Unfortunately, such uncritical use of documentary sources has been widespread, producing widely diverging interpretations. In the most extreme cases, physical descriptions of individuals in the medieval literature have been used as support for theories on racial awareness and racial preference in Landnam Iceland (Kvaran 1936).

The Osteology

Human-osteological studies in Iceland have been carried out by only one scientist, Jón Steffensen. With his tireless and often not fully appreciated work, Steffensen managed to record most of the skeletal material from archaeological excavations (Steffensen 1943, 1946 b, 1953). He did a study on skeletal populations of different periods and invaluable work on the pathological aspects. By performing metric studies, he also gave a rough estimate of the physical aspects and living conditions of the first settlers (Steffensen 1958, 1963). The question of the origin of the Icelanders is also well represented in his published work.

Steffensen's studies of the racial origin, which for the most part were completed in the early fifties, clearly revealed a marked difference between Icelanders and Norwegians of the Iron Age, when compared with Schreiner's studies of the Norwegians (Schreiner 1939, 1946). Considerable differences appeared in measurements of skulls as well as of limb bones and regarding stature (Steffensen

1953). Due to these obvious differences between the first Ice-landic settlers and the total of fifty-nine Iron Age Norwegians used as a comparative material, Steffensen dismissed environmental factors as a cause for the differences and looked instead for explanations in material from the British Isles. Based upon the sample size of eight poorly-defined Iron Age skeletons from Ireland, Icelandic skulls, he concluded, were more similar to Irish skulls (Steffensen 1951, 1953). Steffensen only once reported measurements of Icelandic skeletons which he defined as being in accordance with Schreiner's values for Iron Age Norwegians (Steffensen 1967).

Steffensen stressed the absurdity of drawing on The Book of Settlements in estimating the proportion of Celtic people in Landnam Iceland (Steffensen 1946 a). Despite that, he made his own statistical survey of The Book of Settlements, and concluded that the written information about the massive emigration from Southwestern Norway did not correspond to the results of his anthropological studies (Steffensen 1971). In his later years, much influenced by results of early serological studies (Steffensen 1953, 1969), Steffensen argued, by analysing The Book of Settlements, that 69.1% of the first settlers were Norse and 30.9 % were Celtic (Steffensen 1971). Despite this, Steffensen has never in his work clearly defined how Celtic influences can be detected in skeletal material, and moreover he has never defined what a Celt is exactly.

Unfortunately it is very hard for those who study Steffensen's analysis to get a clear picture of the Icelandic material. In most cases he only presents the mean measurements of all skeletal material. Due to a rather small skeletal material, and really no comparative material from Ireland or the northern British Isles at the time of his studies, Steffensen's approach can no longer be regarded as a modern answer to the question of the origin of the Icelanders. The results are, in many cases totally dependent on Steffensen's own interpretation of information from written sources. These have solid roots in the traditional concept that the historical understanding and the feeling of national identity of the 12th century Icelanders who wrote the Book of Icelanders and The Book of Settlements are identical to those of the 20th century Icelanders.

The odontology, the Icelandic tori

The main subject of Icelandic anthropological odontology has been the tori. Early studies revealed a high frequency of the non-metric characters of *Torus Mandibularis* (a bony exostosis of varying size on the inside of the mandible) (Fig. 1) and *Torus Palatinus* (a bony ridge situated along the midline of the hard palate). Steffensen concluded on the basis of material from the Settlement Period to A.D. 1100 that the frequency of Palatine torus was 53.4% and Mandibular torus 66.2 %, which were much higher values than had been obtained in Norwegian and Irish studies (Steffensen 1969:12). Skeletal

Fig. 1. Fairly extreme case of torus in a female mandible from the Eleventh and Twelfth century cemetery at Skeljastadir in Thjórsárdalur in southern Iceland. The loss of teeth is post mortem. Photo by V.Ö.V.

material from 1100-1650 showed even higher values, while studies on skulls from later periods showed a frequency of 31.6% and 25.4% (Steffensen 1969). A study of present-day Icelanders in 1962 showed only 2.6% and 10.5 % frequencies (Steffensen 1969, Axelsson & Hedegård 1985).

Two recent studies by Axelsson and Hedegård on tori in schoolchildren in northern Iceland, in comparison to earlier studies of earlier populations in Iceland, conclude that secular changes in the incidence of Mandibular torus and Palatine torus among Icelanders suggest a strong influence from environmental factors like masticatory stress and diminish the value of the tori as a genetic or a racial trait (Axelsson & Hedegård 1981,1985). Steffensen had earlier also favoured this explanation (Steffensen 1943, 1969).

Due to the long tradition of debating whether the tori are genetically or environmentally determined factors, the study of Axelsson and Hedegård came as a necessary contribution to the followers of physical or environmental factors for tori. But the fact that the early Icelanders show higher frequencies than neighbouring populations in the late Iron Age is more difficult to explain. Environmental differences between Iceland and, for instance, Ireland, Scotland and Norway in the settlement period are not explained by Steffensen, Axelsson or Hedegård, and have hardly been the cause of a drastic increase of tori within one generation. Diet, climate and economy were probably not that different in the homelands of the emigrants and their new country. No comparative paleoecological studies have so far provided results which could indicate such a major change.

It must also be noted that studies of Icelandic tori have in some cases been carried out on relatively poor skeletal material. It is also of the utmost interest to know what preconditions there were for measuring the tori by these different scientists. Measuring tori in living individuals and on fleshless mandibles seem like quite different procedures. It is thus difficult from a methodological point of view to agree with Axelsson and Hedegård's environmental explanation of the changes in the frequency of tori with the help of a single case study on a living population in Iceland. The question arises as to whether genetic drift and selection of a racial fac-

tor, could in some way explain the difference between the high occurrence of tori in Landnam Iceland and the low occurrence today.

A recent comparative study of mandibular tori by Sellevold (1980) on a medieval Norse population in Greenland and on series of Inuit skeletons from the 14th century to the 17th century has shown that masticatory stress is probably not the main cause or the appearance and development of the torus. The medieval Norse in Greenland, who where descended from people who emigrated from Iceland, have a higher frequency of mandibular torus in the "extreme" category than do the early Greenland Inuit. The Inuit, having a slightly rougher diet, ought to have had a larger torus if masticatory stress is an important factor. The Norse torus is very irregular, while the Inuit torus is rather smooth. This difference within two populations in the same area indicates that genetic factors could play an important role for the appearance of mandibular torus (Sellevold 1980, Iregren & Isberg 1988). A closer comparative study of skeletal populations of Norse Greenlanders, Icelanders and medieval Scandinavian populations with the same non-metric trait might possibly reveal some of the questions connected to the morphology of the mandibular torus, as well as the origin of some of the first Icelanders.

Anthropometric studies

During the last few decades anthropometric studies of the living population of Iceland have been carried out by only one Icelander, Jens Pálsson, partly in cooperation with Ilse Schwidetzky (Pálsson & Schwidetzky 1975, Pálsson 1978, 1986). The starting point of Pálsson's studies has, as is usual for all anthropological studies in Iceland, been the question of whether Icelanders are "Celts" (or "Irish" as he prefers to call them), or "Norse". By estimations based on his own studies of The Book of Settlements, which are not very well documented, Pálsson estimates the percentage of settlers from the British Isles and Ireland to have been about 25%, which again differs from all other estimations (Pálsson 1978). Pálsson has compared metric characteristics of the body and the head, pigmentation of the hair and the eyes, as well as serological gene frequencies of the Icelanders with the same attributes of neighbouring populations. He has reached the conclusion that Icelanders are more related to the Danes and the Norwegians than they are to the Irish, with regards to metric and pigmentation characteristics. When all the factors together with genetic data have been taken into consideration, Pálsson concludes that the Icelanders are and were more closely related to the Norwegians and Danes, but much less related to the Irish, who form a separate group (Pálsson 1978).

In a recent paper Pálsson goes further than this, when he presents his metric studies from different areas of Iceland, and compares his results with the scarce evidence which The Book of Settlements gives on the origin of the settlers in these areas. He concludes that the information in The Book of Settlements about the origin is, in most cases, in accordance with his anthropological findings (Pálsson 1986, Olafsdottir 1989).

Unfortunately, from a purely methodological point of view Pálsson's work contains a weakness for any serious discussion of the origin of the Icelanders. The study is made on a modern population which is descended from a rather small population that has actually been very much on the move and subjected to diseases and emigration. If only one per cent of the genetic pool of the Icelanders has arrived later than the Landnam period, as has been stated by some scolars (see Thorsteinsson 1967, Jorde et al. 1982), this does not even make it more likely that information about the population in The Book of Settlements is in accordance with the results of Pálsson's measurements on present-day Icelanders. It is questionable whether it is reliable enough to come to a conclusion on the metric and pigmental composition of a Landnam population in one area of Iceland, by studying only 150-250 living individuals from that area. That at least shows a firm belief in the written records.

Genetic studies

From the forties to the early eighties it was commonly believed that a high frequency of the O allele in the ABO series in the Icelandic population was a good indicator of Celtic admixture in the population. In this period, the Icelanders gradually became more and more Celtic in series of studies (Fisher & Taylor 1940 , Donegani et al. 1950, Mourant & Tills 1967, Thordarson et al. 1972, Bjarnason et al. 1973, Potts 1976). Some scientists even went so far as to conclude that more than 75 % of the Landnam population was Celtic or Irish (Thompson 1973, Saugstad 1977). This high frequency gave all the advocates of the hypothesis of a Celtic admixture great support, and it was taken into account by many of the scholars who wrote about the origin of the Icelanders. Other scientists, however, remained more reserved towards the apparent high frequency of the O allele (see Pálsson et al.1970).

In 1977 Rafnsson and in 1982 Tills and co-workers explained the high frequency of the O allele as a possible consequence of genetic drift and selective factors like famines and diseases (Rafnsson 1977:72, Tills et al. 1982:519). In the mid-eighties two scientists, Stefán Adalsteinsson and Ellen Wijsman independently concluded that the ABO blood group system was probably not of much help when deciding the racial origin of the Icelanders, or of other nations for that matter. They suggested that the low frequency of the A allele and the high frequency of the O allele among the Icelanders could be the result of genetic selection. Wijsman also showed that other serological gene loci she had studied behaved differently from the ABO, and that Icelanders and the Irish were not so closely related as previously stated (Wijsman 1984, Adalsteinsson 1985, 1987). Adalsteinsson explained the selection as results of, for instance, smallpox epidemics which have been shown to have a selective effect against blood

groups A and AB (Vogel & Chakravartti 1971). From written sources we know of numerous smallpox epidemics in Iceland, which struck both children and adults. So many died in these later epidemics that the genetic composition of the earliest population, regarding the ABO frequency, could have changed considerably (Adalsteinsson 1987, 1989).

Presently, genetic studies on living Icelanders do not seem quite suitable for answering the question of the racial origin and composition of their ancestors. Aspects like selection due to famine or disease, the genetic drift of a relatively small population in a relatively large country, and a time span of 1100 years have to be taken into account. In this connection it would, for example, be interesting to know how dietary changes in the post-war period in Iceland, the introduction of new eating habits and the massive intake of carbohydrates, influence people who have eaten fish, mutton, and milk products for centuries.

There is one feature which characterizes most studies on Icelandic genetics. That is the firm belief in, and uncritical use of, the written sources. We are again and again informed about the large percentage of Celts in the earliest population. In a recent paper it is stated that the founders were, for the most part, Norsemen, who were accompanied by Celtic wives and slaves (Jorde et al. 1982). Such statements are based on a fundamental misunderstanding of the nature of the documentary sources. Hopefully they do not reflect the historical concept which the authors have of the Viking Age. Do they really believe that there was a lack of marriageable Norwegian females or males for the Norwegian men and women who chose to emigrate to the British Isles and Iceland, or did the Norwegian or Norse male who sailed to Iceland generally prefer Celtic spouses or mistresses? (Fig. 2). Such interpretations would of course fit in better with results of a high frequency of the O blood group in Iceland. But in the same way as the statistics are used with the utmost caution, the written sources referred to should also benefit from a similar treatment, and be taken for no more than what they are.

Celts, Slaves and literature

The impact of linking the high frequency of the O blood group in modern Icelanders with the racial origin of the first settlers has already been seen. It is a useful argument for a handful of historians who are convinced that a large percentage of the early settlers were Christians (Gudmundsson 1989) and that there existed an extensive enslavement of Celts in Landnam Iceland. They are convinced that the literary heritage in medieval Iceland has been maintained partly due to the Celtic admixture in the population (Sigurdsson 1988, Yates 1988). Allegedly massive slavery has been used vividly by anthropological and literary scholars (Steffensen 1971, Sigurdsson 1988) to justify a large Celtic admixture in the Icelandic Landnam population, although large-scale slavery can not be justified by historical sources (Karlsson 1975, Foote 1977). A recent

analysis by the present author (to be published soon) of the available archaeological material from the settlement period in Iceland does not indicate slavery or a society in great need of slaves.

Origin or race are only mentioned clearly in a small percentage of cases where the first settlers are mentioned in the written record. But through a somewhat imaginative historical method, some scholars have managed to make references to people who came from the northern British Isles, or only visited the islands, become a solid indicator for a Celtic admixture in the families of these people. When demographic studies on the Icelandic settlement period have been made, all the followers of the alleged Celts from the North British Isles and the Western Isles have been said to be Celtic slaves. All studies of this kind are pure speculation with no roots in reality. Mention of slavery in the written records might as easily be one of the ways a 13th century, monastic author wanted to interpret the heathen Settlement Period.

Fig. 2. Posing is the authors interpretation of the nuclear family of the Settlement Period in Iceland, as it is revealed in some studies: "The family consists of a pagan, Norwegian Viking his Celtic wife and a couple of Celtic slaves, who definitely were good Christians. The slaves could tell some good stories. The Norse and the Celts were of course quite different genetically, regarding size and hair colour. According to some studies the genetic picture of the Icelanders has remained consistent ever since. The descendants of the Celtic Slaves wrote the Sagas and about the Norwegian kings, because the descendants of the Norse farmers were far too busy governing." Drawing by V.Ö.Vilhjálmsson.

Furthermore, it is hard to believe that some kind of a hidden genetic factor of the alleged Icelandic Celts burst out in the 12th century and caused the writing of sagas. Alleged traces of Celtic influence in medieval Icelandic literature might just as well reveal close trading, cultural and ecclesiastical relations between the West Norse area and the British Isles in the 12th and 13th centuries.

The Icelandic language and place-names can unfortunately not tell us much about where in Norway or the British Isles the settlers came from, or even when they came (Teitsson 1984:17). Moreover, the linguistic evidence contradicts a massive Celtic/Gaelic influence. The few Icelandic place-names and personal names with Celtic/Gaelic roots could just as well have been introduced later than the Landnam-period.

The genetics of Icelandic farm animals

Many scientists have studied the genetic aspects of Icelandic farm animals, concerning their origins (summary in Adalsteinsson 1989). These studies have shown that the Icelandic farm animals are more closely related to animals in Scandinavia than those in the British isles. The first settlers brought all their farm animals with them, and the present stocks are descended, with hardly any admixture, from those animals. Even the cat and the field mouse are of Scandinavian descent, and the flea on the Icelandic mouse is of the Scandinavian type, and not of the variety which is found on mice in the British Isles (Adalsteinsson 1989).

Although the apparent descent of Icelandic farm animals is a fairly probable indicator of the ethnic/racial composition of the early Icelanders, it is unfortunately no real proof of the descent of the human inhabitants. If the Icelanders were mostly descended from homeless Celts or people of mixed Norse/Celtic origin who fled from Ireland and the Western Islands, without property or livestock, the farm animals of the alleged governing Scandinavian minority might have become the foundation for the stock of farm animals in Iceland. However, the best way of obtaining information on the origin of the farm animals in Iceland is to study the remains of the animal bones by systematic studies of well dated middens at the Landnam farms. Such studies have only just begun in Iceland (Amorosi 1989).

Archaeology and ethnogenesis

The origin of the first settlers in Iceland can also be dealt with through archaeological material. When the origins of Iron Age Nordic populations are studied through artifacts and typology, one has also to be aware of the possible sources of errors. Artifacts can indicate trade between remote areas and if one finds a single Viking brooch of a Danish type in Iceland, it does not necessarily mean that it was made and worn by a Danish settler in Iceland. It might just as well have been a trade object or a souvenir. The same reservations have to be made about the building traditions.

It is dubious to use archaeological evidence to support biological evidence. Material culture is usually transmitted or mediated in a non-biological way; that is, not by genetic inheritance. To use certain groups of artifacts as indicators of racial origin or emigration is extremely problematic.

The ground-plans of houses are a doubtful indicator to use when one talks about the origin of populations and migrations in the North Atlantic. Many Norwegian, Danish and Icelandic archaeologists and scholars have in a very uncritical way used plans of farm-ruins to show parallels between Norwegian and Icelandic houses. Unfortunately reality is not that simple. The houses were not of course built by an authorized architect, but by an idea, a tradition and a knowledge, which the settlers might have brought with them to the new country. However, factors such as economy, climate, situation of the settlement, fashion, other settlers and other aspects could very easily have changed their ideas, and forced them to build in a different manner. A possible Norse settler, with a possible Celtic wife/husband, who emigrated from the Shetland Islands, could have realized that it was not possible for them to build a house using quite the same technique as back home. They might have obtained some land in an area in Iceland where geological factors made the building material, rocks and turf, and even the soil very different from Shetland. They might therefore have had to build walls with a slightly different technique. Because of their emigration, they might not have been able to manage quite as large a household and a house as they were used to back home, and thus we would, if we found the ruins of this house not immediately guess that the people who built it were Shetlanders. Due to climatic differences, a Norwegian who was used to growing barley and raising stock in south-western Norway would probably have realized that sheep-breeding was more appropriate in an area in Iceland where agriculture turned out to be impossible.

Moreover, Icelandic archaeologists have excavated far too few houses, especially from the Landnam period, to be able to use the typology of the buildings as indicators of anything, not at any rate of the origin of the settlers. But it can still easily be said that the building tradition is Norse/Scandinavian, and not Celtic.

This leaves us with the artifacts which the people left in their houses, their burial tradition and their grave goods. No artifacts older than the 9th century have been found in Iceland. It must also be stressed that no scientific dating methods can verify an older settlement in Iceland than the one at the end of the 9th century (Nordahl 1988, Vilhjálmsson 1988, 1991), and no remains of the alleged Irish hermits, the so called *Papar*, have so far been located (see Eldjárn 1989). The overall artifactual picture is Scandinavian, and mostly Norwegian. No artifacts have ever been found in Iceland which can be defined as purely Irish, Pictish or in other words "insular". In Norway, however, such artifacts are quite common. A few artifacts in Iceland can be defined as Norse with insular influences, such as a series of polyhedral-

headed ringed pins dated to the 10th or 11th centuries. These pins could, however, easily be the result of the good trading relation between Dublin and the West Norse area in the late Viking Age. The absence of Irish artifacts does not mean that there were no Celts/Irish in Iceland. Dominated by a Norse culture, the often alleged artistic ability of the Irish might not have come into its own right.

The contents of just over 300 9th and 10th century burials indicate that the average Icelander of the Settlement Period was a common peasant. The composition of the grave goods reveals a similar picture as do low or middle class inhumation graves in Norway but with some local distinctive marks. The first Icelanders were obviously not real Vikings in the Scandinavian sense. Very little of the richer aspects of Scandinavian society of the Viking age is reflected in the Icelandic archaeological material of the earliest period in Iceland and thus there is very little reason to expect a great demand and use of slaves. Only one golden object has so far been discovered, and there is very little silver and the few silver hoards found in Iceland are very poor compared to those found in Norway or in the northern British Isles and the Western Islands. Most artifacts which can be localized are of a western Norse style or pure Norwegian.

All Icelandic graves are inhumation graves. This has by some scholars who favour a large Celtic admixture been interpreted as a sign of Celtic and Christian influence on the burial pattern, which was picked up in the northern British Isles by the Norse from their alleged Celtic companions and thus brought to Iceland (Eldjárn 1956, Sigurdsson 1988). If The Book of Settlements is taken literally, this does not correspond with the fact that most of the settlers should have originated from south-western Norway. In south-western Norway only 10% of burials from the same period as the Icelands Landnam are inhumations and the rest are cremations (Sellevold & Næss 1987). One has to move up the coast of Norway to the Trøndelag and further to the north in Nordland and Troms to find burials more similar to those in Iceland. If indeed there are no cremations to be found in Iceland, is it then probable that the burial pattern is influenced by Christianity? The answer is no. If Christianity caused the absence of cremations, why did the Christian influence not cause the absence of all grave goods, the proper Christian West-East orientation of the grave or burials only in churchyards? Furthermore, a total lack of grave goods does not necessarily indicate a Christian burial.

The burial customs in Iceland might possibly indicate that not as many Norsemen as has been argued came from the south-west of Norway. When The Book of Settlements and its transcripts were made, the Norwegian king was trying his best to gain a hold on Iceland. The genealogies in The Book of Settlements were probably also written to show an ancestry as grand and as royal as possible. Claiming to be descendants of Norwegian kings, earls, and chiefs from south-west Norway the Icelanders were proclaiming that they really were of highly born Norwegian origin and did not need a king to rule them.

From an archaeological point of view we might therefore be able to put a justified question mark against the alleged massive emigration from south-western Norway to Iceland. Archaeologically, there is practically nothing which indicates a massive emigration from the British Isles to Iceland, either in the form of refugees or as slaves. This does not necessarily mean that there were no people of Norse/Gaelic or pure Celtic origin in Iceland.

The Saami: the forgotten possibility

The anthropologists and the literary scholars in Iceland have hardly considered the Saami, or the Lapps and Finns as they were called by the early Icelanders, to be among the first settlers. Steffensen favours a possible Saami admixture in one skeletal population in Southern Iceland (Steffensen 1943). Pálsson talks about a Saami or Kvenian factor in Iceland (Olafsdóttir 1989), which he illustrates in a modern physiognomic type, which he also calls the Tydal race. Only two literary scholars have favoured the idea of Saami being among the first settlers (see Nordal 1942, Olsen 1943, Sigurjónsson 1973, Pálsson 1990). It seems somewhat strange that apart from those mentioned, the Saami have not been discussed as possible immigrants to Landnam Iceland. According to raw statistical studies of The Book of Settlements, quite a few of those whose roots are mentioned there came from Northern Norway and many came from eastern and inland Norway, where Saami were living at the time of the Icelandic Landnam.

The Saami have been rejected from the Landnam population in Iceland as a considerable factor by Steffensen, with incorrect statements like: they were brachycranes and ten centimetres shorter than the Icelanders, who were mostly mesochranes and dolichocranes (Steffensen 1943). The concept that Saami belonged to a Mongoloid race can also been found in Icelandic literature (Nordal 1948:65).

Of course, some will also say that due to, for example, a high frequency of ABH secretion polymorphism in Icelanders today and a very low frequency among modern Saami (Eriksson et al. 1986) there is no possible way that there were Saami among the earliest Icelanders. Again it must be said that selection, drift, and considerable changes in diet in the present century among Icelanders, as well as Saami, might have changed all that. A high frequency of the A_2 gene is used as one of the indicators of a Saami origin and admixture (Beckman 1980). A study by Tills and co-workers has shown that the A_2 gene, which has a much higher frequency among the Saami than among Swedes and Norwegians (Beckman 1979, 1980), occurs more often in Icelanders (Tills et al. 1982), than in Norwegians and Swedes (Beckman 1980). The slightly higher frequency of the A_2 gene in Iceland has nevertheless not been interpreted as a possible factor for Saami admixture, and could very well have other causes.

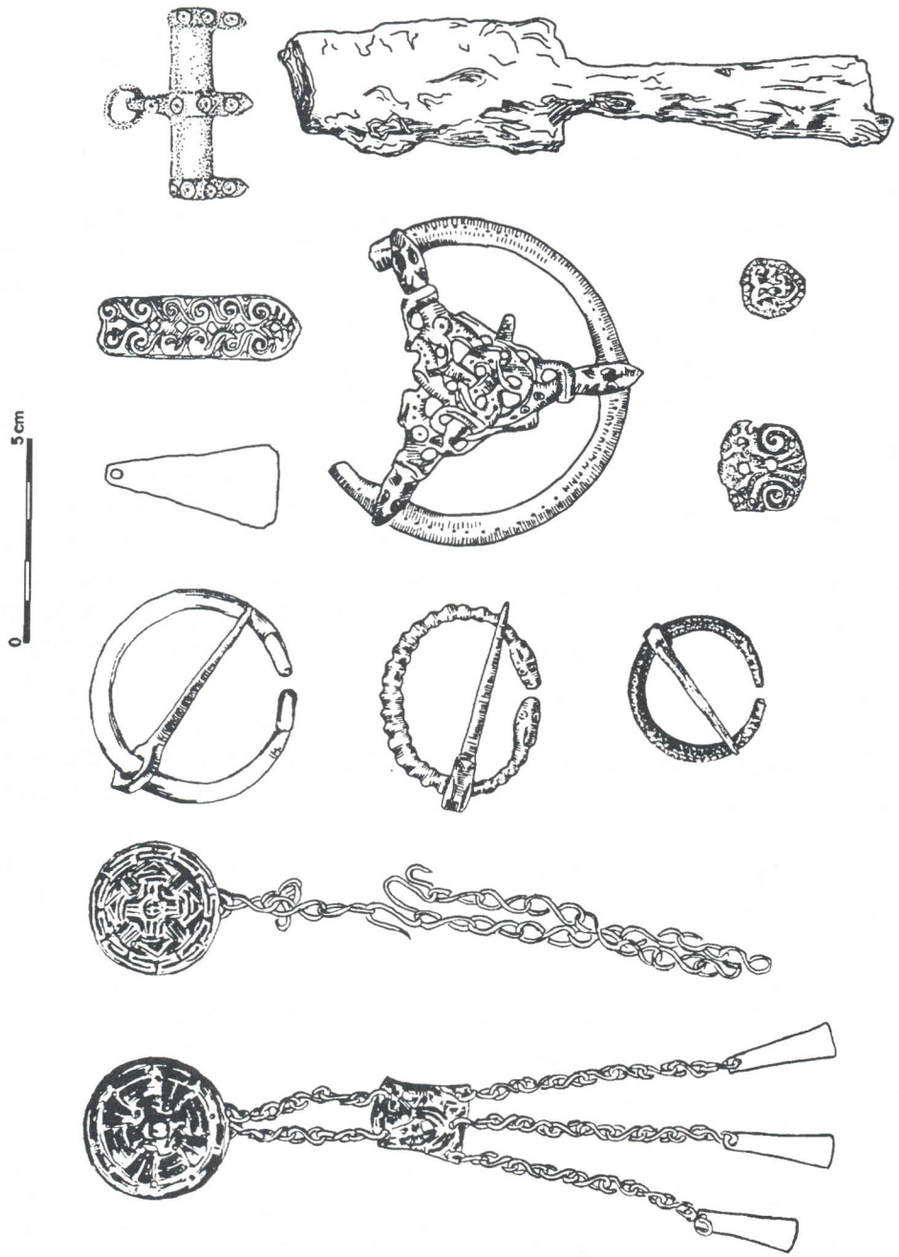

Fig. 3. Series of artifacts found in Iceland of possible eastern Scandinavian, Baltic and Russian origin, or with stylistic influence form those areas. The artifacts are from the Viking Age and the Eleventh and Twelfth Centuries. Drawing by V.Ö.Vilhjálmsson.

There is some mention of people of possible Saami origin (Finnar, Finna, Lappar, "hálftröll", "hálfbergrisi/ar, semsveinar" etc.) in medieval Icelandic literature. One of the greatest personalities of the Family Sagas, Egill Skallagrímsson, regardless of the fact that he could be literary fiction, is partly descended from "hálftröll and Finns". Egill's grandfather Kveldúlfr Thorólfsson, had a farm on Sandnes in Alsten, Hålogaland, Norway and went on trading missions to the Finns. Apart from trading relations, there were, according to the sagas, good relations between the Finns (Saami) and the Norwegians and the Norwegian elite. Might such relations not have caused closer contacts and intermarriage as it did among Celts and the Norse? Several osteological studies have indicated possible relations, interaction and admixture between Norwegians and the Saami (Schreiner 1946:143-57, Stenvik 1980, Iregren 1985, Holck 1988). Archaeological studies have also indicated that the Saami had a large role to play in the trade of northern Scandinavia in the late Iron Age and in later medieval times (Zachrisson 1984, 1987).

In later years there has been much discussion on archaeology and ethnicity regarding the Saami and their settlements in medieval Scandinavia (Reymert 1980, Odner 1983, Zachrisson 1985, Storli 1991) and much work done on the osteological evidence (Iregren 1985, 1988). If some Saami went to Iceland, it is not necessarily detectable in artifactual material or burial customs. This would be the case if the Saami came as secondary followers of Norwegians or as people dominated by the Norwegian culture, or if a Saami element was brought via intermarrige in Norway. But is there any material evidence of the Saami in Iceland? This has to be studied very closely before any answers are given.

A limited number of Viking Age and 11th and 12th century artifacts of East Scandinavian, Baltic or Russian origin or style-influence occur in Iceland (Fig. 3). Similar artifacts in the right context can, in many cases, be interpreted as indicators of Saami settlement and trading activity (Zachrisson 1985, 1988). Finding similar eastern artifacts in Iceland does not have to indicate the same processes in Iceland. Aspects such as trading relations with northern Norway could very well account for the existence of such artifacts in Iceland. But it must be noted that some of the artifacts with eastern influence found in Iceland do not occur in the south-western parts of Scandinavia or in the British Isles. This might moreover indicate that northern Norway and possibly the Saami as well, played an important role for Icelandic trade.

Conclusion

Like Icelandic archaeology and quaternary geology (see Vilhjálmsson 1988), physical anthropology in Iceland has been influenced by a massive belief in the reliability of all information in secondary written sources from the Middle Ages. Most of the Icelandic anthropologists have been brought up in this belief. For earlier generations of scientists and a few young

postwar scholars the Settlement Period (ca. AD 870-930) and the Commonwealth Period (ca. AD 930-1262), together called the Icelandic Free State, are synonymous with Icelandic independence and national identity. All discussions on the relative proportion between Celts and Norsemen in the Landnam population have clearly been influenced by this romantic belief. The discussion has been quite uninteresting and shows that the anthropological and historical interest for the origin has mostly been ethnocentric, even bordering on political nationalism. Regardless of different opinions on the origin, the royal ancestry of the Norse "Vikings" was, and still is, taken for granted and the pride and elegance of the often high-born, enslaved Celts were also fascinating for a nation gaining its independence. The great interest in Celts in Iceland can also be looked upon as a way of distancing Iceland from Denmark and Norway, with their presumably less Celtic past.

When all available aspects of physical anthropology concerning the question of the origin of the Icelanders are taken into account, it seems obvious that all studies on living individuals to clarify that question are almost useless. Genetic uniformity in a small modern population does not mean that former populations were never exposed to any changes.

The documentary sources have clearly been overused in discussions of the origins of the first settlers of Iceland. The written sources cannot profitably be used as a check on themselves, and an independent source of evidence must be found. It would be most effective if the skeletal remains of the first settlers were studied again and compared with new results obtained in the areas closest to Iceland, that is, Scandinavia, the British Isles, and Greenland.

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