

Laila Kitzler Åhfeldt, 2002: *Work and Worship. Laser Scanner Analysis of Viking Age Rune Stones*. Theses and Papers in Archaeology B:9. Stockholm (Archaeological Research Laboratory, Stockholm University).

*review by Klavs Randsborg*

The dissertation is made up of a large body of primary text, comprising over 100 closely printed pages, and five detailed articles on the same themes as the main text. These articles were published separately, starting in 1998, and may be regarded as appendices to the main text. The main text contains the following chapters (each with their own subsections): 1. Introduction; 2. Background; 3. Scientific Studies of Stone and Petroglyphs; 4. Surface Structure Analysis; 6. Applications; 5. Rune Stones – ancient Nordic Tradition or Christian Acculturation; and 7. Discussion and Conclusions. In addition, there are also References (which might more properly be styled “Bibliography”) and four lengthy appendices, mostly in tabular form, presenting all the essential basic data: A = Catalogue (illustrations indicating the location of rune stone samples); B = Data (numerical); C = Mean Profile Diagrams (distributions of three rune profile measurement pairs); D = Discriminant Analysis (statistical).

For the reader, however, both the main text and articles are fairly heavy-going, not least for technical reasons. Furthermore, the overall structure is not entirely satisfactory; there are a number of repetitions, and the subjects are not always discussed in their “logical” sequence. The quality of the English is somewhat uneven, even though the meaning can always be understood. Unfortunately, this is a drawback seen in the works of many archaeologists, both Swedish and from the other Nordic countries, who aspire to international recognition – in the present case, however, such aspirations are fully justified. Either archaeologists must learn to write better or resources, possibly some sort of structure, must be provided in order to bring about an improvement.

Briefly, the primary objective of both the dissertation and the articles is to investigate the actual carvings found on the rune stones, most of which date from 11th-century Sweden – in central Sweden, this was the main phase of rune stone production, naturally carried out by professional craftsmen whose work was subject to a high degree of uniformity (today, some 3,500 rune stones have been located in Sweden). A highly sensitive measuring technique (laser scanning) was used not only to ascertain whether several pairs of hands had been at work on one and the same inscription (or decoration) but also to establish any evidence of different work-

shops. For measurement, high-quality casts were made of the stones and subjected by the author and others to extensive statistical analysis. The method was developed by H. Freij, now deceased, the spiritual father of this approach to runic research.

The argument for assuming individual types of incisions and modes of carving springs from the supposition of different motor patterns in different individuals. However, this, in turn, gives rise to a number of difficulties, including the fact that individual motor skills are seen to change with practice, age, fatigue, changes of tools, and so on. Finally, the hardness and properties of the stone itself will naturally also affect the final result (just as degradation of the stone will later present difficulties all of its own). The advantage of using the incisions for the basis of individuality studies is that the incisions themselves are probably not symbolically conceived and hence subject to conscious manipulation; they are, in other words, objective criteria of the sort advocated by M. Malmer.

Individuality has often been discussed in runic research, both with regard to the carving (or cutting if they are cut in wood) of the letters and to the style of writing and language. As a rule, however, researchers have limited themselves to noting chronological and regional differences. Here, the author goes one step further in identifying the work of specific individuals, regardless of the differences – suggested above – that we might expect to arise with greater age, improved skills, the introduction of new tools, etc.

As the starting point for her study, the author takes the famous Sparlösa stone – a richly decorated monument from Västergötland that is as suggestive as it is impressive – known to have been carved with inscriptions during two different periods, the first dating from the early Viking age, or about 800 AD (cryptic), the second from the 11th century. In the case of the Sparlösa stone, it can be convincingly shown that several different craftsmen worked on the script and images, while still others could have contributed to the shaping of the stone and the linguistic content of the inscription.

In a number of other inscriptions, too – in at least three quarters of those that have been studied – it is possible to discern some form of cooperation, primarily in the inscription

itself; in the decoration, cooperation between the craftsmen has seldom been established, if at all. Such cooperation does not actually come as a surprise, since certain runic inscriptions themselves note that several different craftsmen were involved in their making, and to these we may probably add the rune master (p. 65) who originally “painted” the stone. Apparently, both the inscription and decoration (incl. crosses) were carved just once, as would be expected. Signatures are as a rule less prominent than the main part of the text. In Uppland, with its many rune stones, mutual influences have been observed among the craftsmen.

Finally, the author discusses possible foreign influences on Swedish rune stone production, primarily English Christian monuments and inscriptions dating from the pre- or early Viking period. Such stones were apparently produced in monastery workshops, which would have been eminently suited to the job and were especially capable with regard to iconographic, linguistic and intellectual considerations.

The author therefore raises the question as to whether the Swedish 11th-century rune stones may not have been produced by ecclesiastical workshops – an interesting notion of some importance, not least if considered in the light of the debate on the early Viking period. However, a clear warning against taking our conclusions too far may be found, for example, in the unique Gotland stones, whose roots extend back into Roman times; intellectual knowledge and skills must also be presumed to have been available in a heathen setting. In this context, we should also pursue our inquiries into function, which could provide valuable clues towards a deeper understanding of the stones.

In Chapter 1 of the main text, the *Introduction*, we encounter (p. 7) the first inaccuracy in that rune stones are declared to be the oldest written sources in Scandinavia (as if there were no older minor supplementary runic finds). Additionally, there are technical and, more especially, linguistic ambiguities, which also occur in other places in the text, particularly when it comes to abstract formulation. However, let it not be said that the author has not made every effort to familiarise herself with the problems of runic inscriptions, and, in terminological terms, many of her observations are both sensible and useful.

Chapter 2, *Background*, presents a similarly useful survey of the scope and thrust of modern Swedish rune stone research, including precise dating – this section contains, among other things, a discussion of A.-S. Gräslund’s interesting seriations (published in the excellent journal *Tor*) and, naturally, the search by runic scholars for individual rune masters. Signatures of rune masters are fairly common in Uppland, where quite a few monuments have been attributed to the same master (or, more accurately, the same group of craftsmen). A separate issue is the relation of the rune carvers to those who raised the stones and the individuals named in the main texts. Here the author takes up the matter of the stones’ function, which has not been convincingly clarified in research carried out hitherto, perhaps because rune stones are seldom considered as natural elements of the ancient cultural landscape and community. As might be expected, the author

concludes this interesting chapter with a discussion of carving tools, the marks they left, and the choice of stone (soft or hard varieties of stone, which may have been a factor in setting a price for the finished work). She also notes that different craftsmen may, for example, have been involved in the carving of the runes and the decoration.

Chapter 3, *Scientific Studies...*, brings us to the main theme: the complex scientific and technical elements of the author’s dissertation. Now the study links up with research on petroglyphs, which has also considered the variations found in the cut marks. Although the focus is here on the potential for distinguishing individual carvers, the author’s approach is agreeably broad, and this chapter also contains a discussion of other attempts to identify individual craftsmen. Other circumstances possibly influencing the carving are discussed extensively and knowledgeably (again with many useful references). These may include erosion (caused by weather conditions, biological and chemical substances, etc.), anti-quearian preservation (which may have the opposite effect), whether or not the carving was originally painted, the place of origin of the stone, etc. The issue of accurate scientific dating is also taken up, although this is as yet of little real significance in the field, even though it may soon become so.

Chapter 4, *Surface Structure Analysis*, takes up the actual analyses. A methodological introduction notes that the traditional approach has been to assume that signed stones are the work of a single person, and it is therefore somewhat surprising that the author clearly seeks to ignore this information during analysis. The major methodological problem is, of course, to establish the criteria by which we may identify the work of a “single hand”. In this and other respects, modern analogies play an essential role, especially newly carved rune stones viewed in the light of detailed studies of the bi-phase Sparlösa stone. I will not go into the many specifications of the technical equipment used. I would, however, have liked to see one or two of the simple soft variables such as expenditure and time, even though some interesting information is given – for example, about one week per stone was needed merely to collect the necessary data (as opposed to the one to four weeks or more required simply to perform the original carving).

The measurements – of 48+ rune stones, 40 of them from Uppland – were performed on casts, which were apparently of sufficiently high quality to enable measurements to be made. The objective was not to measure the entire inscription (or ornamentation); instead, a dozen or so especially well preserved sections, evenly distributed across the four quadrants into which the stone was divided, were selected for study. Measurement originally proceeded from the carver’s signature, but this was often found to be atypical and frequently cut less deeply than the other elements of the carving.

The measurement data were digitalised and subjected to a variety of statistical analyses and significance tests rendered graphically in a typical series of three-dimensional diagrams whose variables were three pairs of measurements taken at different depths of the cross section of the groove (an approach also developed by Freij). Naturally, the author

is fully aware of several areas of uncertainty that may have to be addressed and that have already been mentioned: the study is in itself an experiment, as is interpretation of the structures generated and the information supplied by the data. The author notes that the decisive visual element of the stone is the breadth of the rune (the de facto groove), so that work could be facilitated by carving shallow cuts. Somewhat surprisingly, however, the author concludes that the deeper grooves must be the work of a trained craftsman, as he would be able to produce more work in the same time. (It should, for that matter, be possible to test this hypothesis against the uniform width of the cuts and the more even floor of the runes, measured longitudinally, that would be produced by the same skilled craftsman; and, one should also consider whether even good carvers might be subject to laziness.) If this hypothesis is correct, the shallow signature-runes could not have been carved by the rune master himself! The author also notes that the decorative elements are often cut less deeply than the actual runes but have more cuts per section.

The author again refers to her cooperation with modern rune stone craftsmen and cites their experience – an interesting little section on ethno-archaeology with an experimental stamp. The use of templates, for example, is of little help; drawings made directly on the stone, preferably with chalk, are. The chapter concludes with a further review of factors that might be expected to affect the method in practice, and hence spoil the finished work, along with a few brief remarks on surface analysis in fields ranging from petroglyphs to artefacts of metal.

Chapter 5, *Applications*, reviews the five articles mentioned above, i.e.:

(1) Learning to Know a Rune Carver and his cutting technique. A method study and some results (*sic*). *Laborativ arkeologi* 10–11, 1998. This article comprises a series of observations focussing on the identification of modern rune carvers working not only on the same and on different stones but who also changed tools, etc. The identification process produced positive results. A change of tools played no significant role in the identification of individual carvers. It is noted here that most inscriptions appear to be the result of teamwork.

(2) Surface Structure Analysis of Runic Inscriptions on Rock. A method for distinguishing between individual carvers. *Rock Art Research* 17;2, 2000. This article, a conference report targeted at petroglyph researchers, summarises the author's methods and on-going work.

(3) The Sparlösa Monument and its Three Carvers. A division of labour by surface structure analysis. *Lund Archaeological Review*. This article comprises a highly interesting analysis of a primary runic monument (Sparlösa). Two rune carvers worked together on the oldest inscription (and most of the intriguing decoration, which possibly refers to Theoderik (Didrik) the Great, as does the great stone at Rök in Östergötland).

(4) Öpir – A Viking Age Workshop for Rune Production in Central Sweden? A study by surface analysis into the divi-

sion of labour. *Acta Archaeologica*. This article contains a number of sophisticated analyses of the so-called Öpir stones and takes up several of the problems previously mentioned: differences of erosion, changes of tools, development of the carvers' skills. Apparently, as many as four different persons worked under the signature of Öpir.

(5) Individual variability in Rune Carving on Rock. A comparison between individuals and workshops. *Journal of Nordic Archaeological Science* 13. Among other things, this article contains analyses of the so-called Fot stones. The body of the article corresponds more or less to the previous one, but it is noted that there are apparently greater differences between individual rune carvers than between the teams of workers. There may be some overlap of personnel between the craftsmen who created the Öpir and Fot stones, although this has not been conclusively demonstrated.

The same chapter (5) also discusses the crosses that are regularly found on the later stones and that, naturally, reflect the influence of the Christian mission and its interaction with regal power and the élite classes of central Sweden. The crosses appear to have been cut by the same people who carved the inscriptions. A comparison is also made of two runologically similar stones with a view to establishing whether the same carver may not have been at work on both of them. Such analysis is, however, more difficult than one concentrating on establishing differences, partly because of the statistical problems it entails. Once again, several craftsmen appear to have been actively involved with both stones, with one rune carver perhaps working on both.

Rune stones of soft sandstone have deeply incised runes. They emerge quite late, e.g. in the Öpir group, and were perhaps intended for erection in churchyards. A recently discovered rune stone is of similarly soft limestone but dates back to the early Viking period; as at Sparlösa, two carvers seem to have been at work. The chapter concludes with a discussion of regional variations, which do not appear to be especially pronounced.

In Chapter 6, *Rune stones – ancient Nordic tradition or Christian Acculturation?*, a number of cultural and historical aspects are brought forward for discussion, the starting point being the stone sculptures and rune stones produced from the early Iron Age up to the Middle Ages. Of the early stone monuments, special attention is given to the magnificent ornamented stones from Gotland, the earliest of which probably started to appear as far back as the later Roman period (Gotland swirled ornamentation on the well-dated Pine Ship excavated from Nydam Bog in Denmark). In contrast to the many late, Christian rune stones, specifically pagan features are otherwise scarce. On the Swedish mainland, rune stones are very rare before the onset of the second millennium and may therefore be understood to have been inspired *en bloc* by Christian European stone sculptures (even the early Gotland stones are likely to have been European inspired). The student also brings up various eastern stone sculptures, some from as far away as Armenia; these will not be commented on here since the parallels are not considered

relevant. Indeed, one might have wished for a discussion of the Danish material.

Ornamented cists and recumbent gravestones, often with 11th-century runic inscriptions – the grave is constructed in the form of a dwelling – possibly derive their inspiration from English (and continental) sources and should otherwise be linked to the group of late central-Swedish rune stones through the use, among other things, of prayers for the dead individual. The ornaments are both Nordic and continental (“Romanesque”). In several cases, the cists have been found at later monastic sites. Here, too, one might have wished for a discussion of conditions in Denmark (and northern Germany, the place of origin of, among other things, the vast majority of contemporary coins). The use of runic monuments in stone churches – mostly from the 12th century and on – has been variously interpreted: frequently they are regarded simply as having been a practical source of building stone, or, secondarily, as having been incorporated in the church to “christianise” a traditional material. This reviewer inclines to a highly conscious symbolically loaded reuse, as in the case of Stenkyrka, Gotland, where the ornamented stones of the builders’ ancestors taken from the large nearby grave-field – the stumps remain in the ground to this day – have been built into the church walls in large numbers; here, as in other places in Sweden, lack of material cannot be used as an argument.

The author thus suggests that the general stone-carving tradition of 11th-century central Sweden was something new. At the same time, the question arises as to the origin of the tradition in a Christian, foreign environment – primarily England – rather than in its more natural setting of Nordic wood-carving art. Stone-carving is, of course, a highly demanding craft. The masters’ signatures, which increase in number during the latter part of the 11th century, may possibly also be seen in the light of hope of salvation, in that a name is given; or there may be other reasons for the appearance of the signatures, such as legal and/or spiritual guarantee or testification, as this reviewer would maintain. At the same time, the author notes that the many signatures may reflect the existence of a stone carvers’ guild. Finally, the author notes – in the form of a number of quotations from the specialist literature – that the masters’ signatures may indicate ecclesiastical sanction or blessing of the stone, or even simply that the literate rune carvers were men of the Church and the Christian mission, perhaps primarily associated with the bishops.

In chapter 7, *Discussion and conclusions*, the final chapter of the main text, the discussion continues on the rune carvers and the Church along with a review of several of the issues already mentioned, more especially the forms of cooperation under which the craftsmen may have worked. These are, primarily: (I) Workshops (as suggested by the fact that different hands seem to have worked on the same stone); (II) Schools (groups of craftsmen who worked in the same style and who possibly may have been associated with the king, in spite of the fact that not even in England is there any evidence of this, cf. p. 67); (III) and/or guilds, based,

for example, in Sigtuna, which, with a missionary bishop in about 1060, is often regarded as the place of inspiration for the later rune stones. The notion of guilds was inspired among other things by the mention of Friesian “merchants’ guilds” on an 11th-century rune stone from Sigtuna. However, among the circumstances tending to discredit the theory of the existence of a stoneworkers’ guild before the 12th and 13th centuries is the fact that the craftsmen could hardly have been occupied on a full-time basis, since a stone-building culture had not yet sprung up. Still, we cannot discount the possibility that there may have existed some sort of cultural community between the rune carvers. Depending on the dating of the stone, it is not even inconceivable to see an allusion to the late 11th-century brotherhoods of Crusaders (cf. the capture of Jerusalem at the end of the 11th century).

One of the crucial points still remains, however: the matter of the “patrons”, or orderers, of the rune stones, and hence the issue of the value of the stones as social signals and their significance in the community at large. Here, I would again stress the extraordinary interest of the people of the Viking Age in conquest and the acquisition of property, suggesting that the rune stones may have played a related role. Even though the language is ceremonial and focuses on matters of honour, the structure of the runic inscriptions is often that of a deed of conveyance, as, for example, a comparison with Anglo-Saxon documents clearly demonstrates. Cooperation on the inscriptions may simply be the result of a need for haste, which again would suggest a legal necessity. In this context, the Christian elements may simply be seen as a bestowal of official Church sanction, the master’s signature being the name of the “notary”, who might himself be a man of the Church. (The author also mentions that Bailey gives the local land-owning Vikings in England the honour of ensuring the success of the local plastic stone sculptures, and even for the spread of the sculptures beyond the walls of the monasteries [p. 67].)

If this hypothesis is correct, the erection of rune stones reflects among other things the process of property acquisition that got under way in about 700, culminating in Denmark in about 1000 and in Sweden during the 11th century.

The student’s (and others’) comparison of the rune stones with Anglo-Saxon stone sculptures also overlooks the fact that the rune stones are almost all monuments erected in memory of the dead. They may indeed incorporate certain Christian elements, such as crosses and a request for prayers, but, to borrow a term from art history, they are by no means the dogmatic “statements of propaganda” for the faith as are the familiar stone crosses of the British Isles (cf. p. 71). Allusion to costly, rare manuscripts, which the rune stones, with their flat surfaces, might even suggest, can hardly be considered to be of decisive importance (p. 71). Rather, there is a tendency towards the stereotype characteristic of the later central Swedish stones; one perceives the role of the craftsmen as being that of a present-day tombstone carver rather than that of the “poets” who composed the stones at Sparlösa and Rök.

In making these observations, I have consciously relegated the student's fascination with the Christian mission in central Sweden (and its possible English roots) to the background of the discussion. Much of the "mission text" of the final chapter, which is fairly studded with "exclamation marks", comprises a relatively useful review of conditions abroad in combination with general guesswork. Here, the student's cultural and historical views will stand out in strong contrast to the carefully reasoned scientific studies and investigations that have so far addressed the rune stones and their problems.

It should be emphasised that there is scant evidence of the existence of monastic institutions in the Nordic countries before 1100, even in Denmark. The earliest documented monastery is – perhaps by mere coincidence – Dalby in Scania (dating from 1060). In Roskilde, Ringsted and Slagelse, all in Sjaelland, and in Lund and Schleswig, the earliest documented monasteries all date from the period from about 1073 to 1088, while in Odense a monastery was founded in 1095. This does not mean, of course, that the missionaries and bishops were not accompanied by an entourage of clerics and other men of the church who would *de facto* function as a "monastery", albeit a travelling one. The student also mentions the holy women from central Sweden, such as one Ingerud who intended to travel "to Jerusalem" some time in the first half of the 11th century. Although the student attempts to attribute a certain role to these women, who were members of the contemporary élite, this is hardly

justifiable on the basis of our present sources. As we know, rune stones were seldom erected in memory of women.

To conclude, one should note that the author's approach to her work is both thorough and systematic. She has demonstrated full mastery of the necessary technical and statistical analytical tools and is well acquainted with the problems encountered in archaeology and rune stone research. Her observation that several craftsmen may have been at work on one and the same stone, if not new (as shown by the stones themselves), has now been demonstrated by a method that can be usefully applied to all rune stones. It will thus be highly interesting to follow the results of future research in this field. The author herself points to areas such as regional and chronological differences in carving techniques, etc., although these would hardly be of such decisive importance as the expansion of analyses to include, say, the Rök stone and the royal Danish stones, and more especially the great stone at Jelling, whose interpretation is a central issue in a great many areas. One point remains, however: to solve the mystery of the fleeting "masters' signatures" – who was it who actually signed the stones, and when? And why were the stones signed? This, however, is a problem that can probably be solved in the light of further analysis of the symbolic idiom of the stones (cf. studies by A. Andrén) and their significance in the community, as should be recommended.

*English translation by Alan Imber.*