A Semitic origin of some runes

An influential foreign presence in Denmark c. AD 200

By John Troeng

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Though most Germanic runes probably derive from Latin letters, some of them cannot be convincingly derived from that source. At least five runes are better explained as originating from letters of the Nabatean variety of the Aramaic Semitic alphabet. The Nabatean kingdom comprised approximately present-day Jordan and the Sinai, was occupied by the Romans in AD 106 and then became the province of Roman Arabia. A thousand archers recruited from Roman Arabia were stationed on the *limes* at Straubing in Bavaria in about AD 125–200. Professional soldiers from the Roman army appeared in Denmark about AD 200 and thoroughly reorganised the society. The earliest runic inscriptions date to about AD 200 and were closely connected with the professional soldiers. These probably included archers from Straubing.

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Introduction

The runic alphabet, the *futhark*, was used in most Germanic areas. The earliest clearly runic inscriptions are mainly from Denmark and date to the first half of the 3rd century AD, though one of them may be from c. AD 160. About AD 750 the *futhark* was thoroughly revised, and this paper will refer only to the older *futhark* when it says runes, runic alphabet etc.

No runological problem is as controversial as the origin of the *futhark* (Odenstedt 1990, p. 146). Attempts have been made to derive it from the Latin, Greek and North Italian alphabets. None of these can explain the forms and sound values of all the runes satisfactorily. Any assumption of more than the slightest development of runic form (such as inversion or slanting of a horizontal line) from mother letter to posited runic heir opens up a floodgate of possibilities and should not be accepted (Williams 1995, p. 189–190). The same strictness is desirable also regarding the sound values of the runes.

The letters of the archaic Greek script are more similar to runes than are the Greek letters of the 2nd century AD (Morris 1988, p. 151–154). The time gap of some 500–700 years to the earliest runic inscription, however, makes this comparison anachronistic and untenable (Odenstedt 1991). There is also a long geographical distance between the Germanic areas and the areas of the archaic Greek script.

Some runes are identical in form and sound

value to letters found in one or another of the alphabets that were used in North Italy before the area was Romanised (Marstrander 1928, p. 87). Among these, the Sondrio and Lugano alphabets have the greatest number of letters similar to runes, but the model alphabet of the *futhark* must have been more Romanised than any of these alphabets (Hammarström 1930). For an alphabet in North Italy to have become further Romanised, it would have required a strong Roman presence in the area. This would have made it unlikely that one of the subjugated local tribes could have provided the model of the *futhark* (Odenstedt 1990, p. 150). There is also a geographical gap between the North Italian inscriptions south of the Alps and the Germanic peoples north of the Danube, and an even wider gap between the North Italian inscriptions and the area of the earliest runic inscriptions.

The North Italian theory has been revived and underpinned by an attempt to explain the *futhark* sequence by manipulations of a 26-letter long proto-Tyrrhenian or North-Etruscan alphabet from the 7th century BC (Seebold 1986, p. 541–548; 1993; Mees 2000). These manipulations include removal of two letters from the original alphabet, change of the sound values of some letters, change of the forms of some letters, pairing of runes, and reordering of the pairs of runes. The pairing of the runes follows a freely invented and rather arbitrary scheme that is very different from the regular Atbash scheme referred to. The reorganisation of the sequence of rune-pairs follows another specially invented scheme that is similarly unwarranted and not as regular as claimed. Such a sequence of *ad hoc* manipulations proves nothing. Calculations would be needed to prove that the manipulations have a significant degree of regularity.

The theories of an exclusively Latin origin of the *futhark* usually presume that some Scandinavian merchant or soldier went to the Roman Empire, learnt the Latin script, invented a new script, and introduced reading and writing on arrival back home (Moltke 1976, p. 57–58, Rüger 1998). Romans who came to Germanic areas would hardly have created a new script but would rather have used the Latin one.

There are two major objections to the idea that a Scandinavian brought the script to Scandinavia. Firstly, scripts are generally not dispersed in this way. Barbarian merchants and soldiers were in close contact with the Egyptian and Chinese civilisations for centuries and millennia without ever establishing reading and writing in their own countries. Africans and American Indians whose contacts with European civilisation were limited to trade with travelling merchants never modified the European scripts for their own needs. The art of reading and writing was efficiently dispersed only when those who were literate since childhood settled in new areas as merchants, colonialists or missionaries. The well known Cherokee script was developed in Georgia only in the 19th century, when Georgia was a state led by Americans of European descent. The Easter Island *rongorongo* was invented without European settlement on the island. It is, however, not a true script but only a graphic representation of a highly limited corpus of rhetorical statements (Fischer 2003, p. 290–291).

Secondly, there is no indication of Scandinavian soldiers in the Roman army before the runic script had appeared in Scandinavia. Arminius, of the Germanic *Cherusci* tribe between the Weser and the Elbe, was trained in the Roman army only because the *Cherusci* had been subjugated to the Romans. After having been defeated at Kalkriese by Arminius' coalition of Germanic tribes in AD 9, the Roman army did not venture into Germanic areas much beyond the Rhine and shun from employing Germanic soldiers for a long time. Men of Germanic descent were recruited as soldiers to the auxiliary troops of the Roman army already in the 2nd century AD, but these Germanic soldiers came from tribes settled in the Roman provinces and had to be Romanised before being recruited (Alföldy 1968, p. 136–163). *Vita Marci* states that gladiators, mountain tribes in Dalmatia, Greek country constables, and Germanic soldiers were recruited to the army during the Marcomannic wars, AD 166–180 (Lennartz 1969, p. 161). Because the Germanic soldiers

are mentioned in this context they seem to have been rather few. There were deserters from the *Marcomanni*, the *Quadi*, and perhaps other Germanic tribes participating in the Marcomannic wars (ibid., p. 190), and the Germanic soldiers may have been recruited from this group. Soldiers recruited from these tribes would probably not have settled in Scandinavia after having served in the Roman army. Scandinavians who knew neither the local tongue nor Latin, the language of command, would not have been recruited even if they had, somehow, travelled through the territories of different German tribes to reach the *limes*. The *vexillationes* units that were introduced by the end of the 2nd century could also be recruited from client tribes in the border area (Schutz 1985, p. 26–27). Because there is no evidence of client tribes in Scandinavia, it is very unlikely that any Scandinavian soldiers had served in the Roman army when the runes appeared in Scandinavia at the beginning of the 3rd century AD.

It may be concluded that the many attempts to derive the runic alphabet from the Latin, Greek, and North Italian alphabets have not been successful. It may therefore be asked what other alphabets might have been the model of the runic alphabet. Iberia had its own alphabets but they were never used near any Germanic area and are not attested to have been used after the 1st century BC. Because no further alphabet is known to have been used by any European people in Roman times, an alternative model of the runic alphabet has to be sought outside Europe.

Roman army auxiliaries from Africa and Asia who were stationed on the *limes* in Europe in the 2nd century AD are presumably the only people who may have provided a non-European model for the runic script. There were auxiliaries from the provinces of Mauretania, Africa proconsularis, Syria, and Roman Arabia on the *limes* in Europe (Stein 1932). They may all have used Semitic scripts.

Morris (1988, p. 157) found that the appearance of the runes suggests that they could derive from some Semitic alphabet. An Aramaic Semitic script was the model of the Turkish runic alphabet in Central Asia (Haussig 1985, p.

81–85). This alphabet (V. Thomsen 1919, p. 30–31) had letter forms such as:

ᚠ ᚥ ᚦ ᚷ ᚧ ᚾ ᛁ ᛘ ᛉ ᛏ ᛒ ᛗ ᛁ ᛦ

These letters were probably not related to the Germanic runes, but they indicate that rune-like forms may have developed from the much more rounded forms of Aramaic letters.

Non-representation of double letters, writing of words without spacing, and variable direction of writing in early runic inscriptions are features that were advanced as arguments for the Greek theory vs. the Latin theory (Morris 1988, p. 125–139). In defence of the Latin theory these features were explained as independently invented for the runic script or as a result of the runic script being primitive (Odenstedt 1991, p. 383–384). Recourse to such *ad hoc* explanations is not necessary to escape acceptance of the Greek theory. Double letters are not represented in the Nabatean Aramaic script (Cantineau 1930, p. 37). Consecutive writing is normal in the Nabatean script and other Semitic scripts. Most Semitic scripts are written from right to left. The variable direction of writing in early runic inscriptions could perhaps be explained by the runic script being based on two scripts with different directions of writing. Three features of the runic script that were forwarded as arguments for the Greek theory may thus instead be used as arguments for a Semitic theory.

The runic alphabet is the only European alphabet known to have had meaningful letter names such as the Semitic alphabets have. The name of the first rune, *fehu* "cattle", and the name of the first Semitic letter, *alef* "ox", have practically the same meaning (Rasmussen 1990, p. 121). This supports the idea that a Semitic alphabet was at least one of the models of the runic alphabet.

It would not be unique for the runic alphabet to be based on more than one alphabet. The Iberian type of alphabet that emerged in 800–500 BC was based on both the Phoenician alphabet and the Greek alphabet (Untermann 1987). The first alphabet for a Slavonic language, the Glagolithic alphabet from the 9th century AD, had Semitic letters, Greek letters, and Christian symbols as models (*Nationalencyklo-*

pedin 1992:7, p. 498). Though the Iberian and Glagolithic alphabets were based both on Semitic and Greek alphabets, there is no evidence that a mixed Semitic-Greek alphabet ever existed.

Among the leading Semitic alphabets used in the first centuries AD there were the Jewish (Hebrew) script used by the Jewish diaspora and the Nabatean Aramaic script used in Roman Arabia, approximately the area of modern Jordan and the Sinai (Hooker 1996, p. 236–242). The Nabatean script has been seen as a forerunner of the Arabic script (ibid., p. 246). Runes difficult to explain from Latin letters appear more similar to Nabatean letters than to other Semitic letters.

Nabatean models of some runes

Most runes have their forms and sound values well explained by Latin letters (table 1). The arguments for the derivation of the runes from Latin capitals have most recently been elaborated by Odenstedt (1990) and Williams (1996). The inventor of the runes may have been more likely, however, to have been confronted with the cursive Latin writing of e.g. graffiti and military diplomas than the Latin capitals displayed on stone monuments (Quak 1996, p. 172). The Latin cursives ⅄ *a*, Ⴙ *h*, Ⱡ *n*, ſ *s*, ? *l*, and Ⴍ *o* from the first two centuries (Thompson 1912, p. 335–337) may explain better than Latin capitals the forms of the runes. The sound value of runic ſ is contested but usually thought to be i. No Latin capital can explain the combination of form and sound value of runic ſi, but *cursive Latin* Z *y* can do it. Nevertheless, some runes are best derived from Latin capitals, e.g. the problematic runic ◇ is best derived from Latin Q *q* which is close in both form and sound value.

The runes, X *g* / 3, Ᵽ *w*, ᵉ *j*, Ⱪ *p*, Ⴀ *z*, Ⴘ *e*, Ⴘ ð have been difficult to explain by derivation from Latin letters.

Runic Ᵽ θ has usually been thought to derive from Latin D *d* but neither the forms nor the sound values are quite similar. It is also strange that the Ᵽ-rune and not the *d*-rune would have the form of Latin D. Nabatean ϐ tᶜ (Hooker 1996, p. 248) better explains that runic Ᵽ has a

stem that reaches above and below its pocket. It also better explains that Ᵽ represents a voiceless dental consonant.

Runic ¶ *w* and Ⴀ *z* were proposed to have been modelled on Latin P and Y, but there was no good explanation for their sound values (Odenstedt 1990, p. 163–166; Williams 1996, p. 215–216). Nabatean ¶ *w* and ᵝ ſ (Hooker 1996, p. 247) instead may well explain the forms and – sound values of runic ¶ *w* and Ⴀ *z*. It has been presupposed that the original runic forms were angular such as Ᵽ *w* (Odenstedt 1990 p. 159), but this assumption is not warranted (Williams 1992, p. 200–201; Barnes 1994, p. 17–18; Odenstedt personal communication).

The *g*-rune, X , has the form of Latin X *ks* but seems to have denoted *g* (e.g. Williams 1996, p. 214) or 3 (e.g. Odenstedt 1990 p. 160–167). Nabatean λ seems to have denoted both *g* and Y (Cantineau 1930 p. 39; Hooker 1996 p. 247). It has a sound value similar to the *g*-rune and may have developed into the *g*-rune's form when inscribed in e.g. wood.

Runic ᵉ *j* has been proposed to derive from capital Latin G *g* (Odenstedt 1990 p. 160, 165; Williams 1996:), but 2nd-century cursive Latin ſ *g* is more similar in form to the *j*-rune. The difference in sound value between the rune and the proposed Latin model letter is remarkable, however. In the Latin script the *j*-sound was denoted by l *i*, and it is unclear why this letter was not used to denote the *j*-sound, had the *j*-rune been derived from the Latin script (Odenstedt 1990 p. 65). Nabatean ϟ *j*, *i* (Hooker 1997, p. 248) provides the best explanation of the combination of form and sound value that constitutes the *j*-rune.

Runic Ⱪ *p* has usually been seen as a coinage, but has also been derived from Latin B *b* or K *k* (Odenstedt 1990, p. 160, 166; Williams 1996, p. 214). Cursive Latin Ⴀ*p* (Prou 1910, p. 58) is closer in both form and sound value. Nabatean Ⴈ *p*, *f* (Cantineau 1930, p. 30, 38; al-Theeb 1993, p. 177) is also more similar in form and sound value to runic Ⱪ *p*.

Runic Ⴖ *e* or Ⴘ *e* has usually been thought to derive from capital Latin E (Odenstedt 1990, p. 97–101). This derivation is based on questionable theories about why the form

Latin letters			Nabatean letters		Runic alphabet	
Capital	Cursive	Sound value	Form	Sound value	Form	Sound value
F		f			ᚠ	f
V		u, v			ᚢ	u
D		d	ᶎ	tᶜ	ᚦ	θ
A	⅄	a			ᛅ	a
R		r			ᚱ	r
C	⟨	k			⟨	k
X		ks	λ	g, Ɣ	Ⅹ	g / ꝣ
P		p	ᕻ	w	ᕻ	w
					ᚹ	w
H	⋈	h			ᚺ	h
N	⊬	n			ᛏ	n
I		i			ᛁ	i
G	ᕀ	g	ᔢ	j, i	ᛁ	j
Y	ᒥ	y			ᛝ	i (?)
Z		z				
B		b	ᒕ	p, f	ᛐ	p
K		k				
P	Γ	p				
Y		y	ᵞ	ʃ	ᛏ	z
S	ʃ	s			ᛇ	s
T		t			ᛏ	t
B		b			ᛒ	b
E	⟍⟍	e	ᐧᐧ	h, a, e	ᐧᐧ	e
M		m			ᛘ	e
M		m	ᔕ	m	ᛘ	m
L	?	l	ᒐ	l	ᛁ	l
Q		k			◇	ŋ
D		d			ᛜ	ð
O	ᵔ	o			ᛟ	o

Table 1. Latin letters, Nabatean letters, and the runic alphabet —Latinska bokstäver, nabateiska bokstäver och runalfabetet

would have changed. Runic Ⅿ *e* has alternatively and without proper regard to its sound value been derived from Latin M *m* (Williams 1996, p. 214–216). Cursive Latin \\ *e* (Thompson 1912, p. 335) is close to the *e*-rune in both form and sound value. Nabatean Π (Naveh 1982, p. 137) is almost identical in form to the *e*-rune. In the consonantal Nabatean script it represented primarily *h* but was also used for representation of *e* and *a* (Cantineau 1930, p. 46–47). It seems more likely, however, that runic Π e derives from a letter that primarily represented the *e*-sound and at the same time was close in form to the *e*-rune, i.e. from cursive Latin \\ *e*.

Runic Ⅰ *l* has usually been derived from Latin L *l*. Nabatean ⅃ *l* (Naveh 1982, p. 156) is somewhat closer in form and may instead have been the model of the *l*-rune.

Runic Ⅿ *ð* has usually been seen as a coinage, possibly from doubling of runic ⰸ θ or Latin D *d* (Odenstedt 1990, p. 160–164; Williams 1996, p. 216). This derivation also requires an explanation why the resulting rune was not ⰸⰸ. No Latin or Nabatean letter can satisfactorily explain the form of runic Ⅿ *ð*.

Latin M has usually been seen as the sole model of runic Π *m* (Odenstedt 1990, p. 160–167). If also Nabatean ⰾ*m* (Cantineau 1930, p. 29) influenced the form of runic Π *m*, this form is better explained.

Since most runes derive from Latin letters, it may be asked why not all runes had Latin model letters. Only for the þ-, *w*-, and *j*-runes and perhaps for the *g*-rune can the use of Nabatean models be explained by there being no Latin letters with the proper sound values.

Nabatean letters may have been used as models of *p*- and *z*-runes and perhaps the *m*-rune because the (capital) Latin letters of these runes were too similar in form to other runes. If the sound value of runic ⵤ *p* had been denoted by capital Latin P *p* this rune would have become almost identical to runic ⵣ *w*. The cursive of this Latin letter or a Nabatean letter may therefore have been used instead. If Latin Z had denoted the *z*-sound this rune would have become too close in form to runic ⵊ i (?). Because Latin M *m* was very similar to runic Ⅿ *e*, a diffe-

rent form may have been needed to denote the *m*-sound.

It is more difficult to say why Nabatean models would have been chosen for runic Π *e* and Ⅰ *l*. Because horizontal lines were avoided in runes (Odenstedt 1990, p. 158), Latin E *e* may have been less suitable to denote the *e*-sound than Nabatean Π *h, a, e*. The horizontal arm of Latin L *l* may similarly have made this letter less suitable than Nabatean ⅃ *l*.

Forms and sound values thus indicate that some runes probably derive from Nabatean model letters. It must then be asked how letters of the Nabatean alphabet used in Roman Arabia may have become models of certain runes in northern Europe. Only people of Nabatean descent are likely to have known the Nabatean letters well enough to use them for an alphabet.

Nabateans on the limes at Straubing in Bavaria
The wealth of the Nabateans was based on control of the long-distance trade between Mesopotamia and Egypt and between South Arabia and the Mediterranean coast, as well as on participation in the lucrative Mediterranean trade (Glueck 1966, p. 346). Nabatean inscriptions in Europe have been found in the Greek archipelago, at Puteoli near Naples, and in Rome (Wenning 1987, p. 22–23). After AD 106, when the Romans had turned the Nabatean kingdom into a province called Roman Arabia, soldiers of Nabatean origin began to be recruited into the Roman army (Bowersock 1983, p. 76, 107–108). Two cohorts recruited there were stationed on the *limes* in Germany (Walke 1965, p. 55–56). The cohort that will turn out to be of particular interest is described below.

The *Canatha* cohort of 1,000 archers was recruited from Hauran in Roman Arabia and came to Straubing (*Sorviodurum*) in Bavaria some time in AD 121–128 (Walke 1965, p. 55–56, 83–87). *Canatha* (modern El-Qanawat) was only 40 kilometres north of Bostra, the provincial capital of Roman Arabia (Bowersock 1983, p. 101–106). Though *Canatha* was not actually located in Roman Arabia at that time but a few kilometres north of the border with Syria (Bowersock 1983, p. 66, 103, 114–115), the *Canatha* cohort was probably mainly of Nabatean ori-

gin. When the cohort was in Bavaria, it probably received a continuing flow of recruits from Roman Arabia (Keppie 1984, p. 185). Military diplomas indicate that the *Canatha* cohort was still at Straubing in AD 166, but such diplomas are lacking from later periods (Stein 1932, p. 80, 286; Kellner 1971, p. 67).

Crafts were well developed at Straubing. Many woodworking tools such as iron saws, iron chisels, an iron wedge, and an iron plane have been found in the remains of the fort there (Keim and Klumbach 1951, p. 37–40). There was an unusual amount of bronze casting taking place for an auxiliary vicus (Walke 1965, p. 86).

Nearly one hundred bone and iron pencils (*stili*) and almost as many graffiti on pottery found at Straubing indicate unusually intensive writing for an auxiliary camp (Walke 1965, p. 58). The pencils usually had a pointed end for writing in wax and an opposite broad end for erasing inscriptions in wax (Kellner 1971, p. 103). Some of the iron pencils found at Straubing are peculiar in that the non-pointed end is not broad and splayed out but broad and tapering like a chisel and with an asymmetric edge (Walke 1965, p. 58, Tafel 112:1–2). Because a chisel end was less functional for erasing inscriptions in wax, it is not satisfactory to explain the chisel ends only as a whim of the workshop. Chisel ends are suitable for making short straight scores in wood, e.g. when inscribing runiform letters. The peculiar pencils found at Straubing may thus have been made for inscription of Latin or runic letters in wood.

No true runic inscription has been found at Straubing, but non-Latin rune-like forms occur in some of the Latin inscriptions there. Graffiti on pottery has ‹ *k*, ‹ *s*, and ‹ *o*, (Walke 1965, Tafel 146–147). Bronze armour with Latin inscriptions has ‹ *k* and ↑ *t* (Keim and Klumbach 1951, p. 16, 20, fig. 13, 16). No comparable number of rune-like characters is known from any other Roman site of the 2nd century AD.

An old north–south trade route from the upper Elbe and the Bohemian basin crossed the upper Danube at Straubing. This trade route was important already in the late Neolithic and there was an *oppidum* at Straubing in the Celtic era (Walke 1965, p. 80). This was succeeded by

a Roman fort in whose vicinity bronze, iron, wood, leather and cloth were worked (Walke 1965, p. 50–63). As the Nabatean wealth had been based on control of long-distance trade, auxiliaries of the *Canatha* cohort may also have been interested in engaging in the long-distance trade from Straubing.

The Roman army units at the *limes* normally got their supplies from their own provinces and sometimes also from nearby areas on the other side of the *limes* (Junkelmann 1997, p. 52–54, 73–85). By the end of the 2nd century AD the ongoing change to a wetter and colder climate in Central Europe accelerated and resulted regularly in poor harvests (Zabehlicky 1994). In the late 2nd century the population in the area of Straubing seems to have decreased drastically, possibly as the result of pest (Junkelmann 1997, p. 188). Then the Roman forces at the *limes* in south Germany probably could not get necessary supplies from the Roman hinterlands or nearby Germanic areas. They may have had better chances to find them in more distant Germanic areas (Lund Hansen 1995, p. 431–435). Auxiliaries may have had worse living conditions than legionaries, and those from the Near East would have had great difficulties in returning home when dissatisfied. Dissatisfied soldiers may have revolted and gone plundering as a result of the economic crisis (ibid., p. 435). If the *Canatha* cohort had heard about the trade route to Scandinavia they may have gone there to seek a living.

The Roman military presence at Straubing may be traced in the numbers of coins found there from different periods. While there are 1–3 coins from each of the emperors in the 1st century AD before the Roman fort had been established shortly after AD 76, the number is some 20–50 coins from most of the emperors in the period AD 81–211 (Walke 1965, p. 74, 80). As many as 24 coins of Septimius Severus (AD 193–211) have been found at Straubing, but only 0–2 coins from each of the subsequent emperors of the 3rd century (Walke 1965, p. 74). Of eleven coins found at Straubing that are thought to have been hidden, nine were struck for Septimius Severus (ibid..). These coin finds are best explained by unrest and the

termination of the military occupation of the fort at Straubing in AD 193–211 or shortly afterwards. The Canatha cohort thus seems to have left Straubing in this period.

Professional soldiers and reorganisation in Denmark from about AD 200

After c. AD 200 there were professional soldiers in Denmark, and war there reached hitherto unknown proportions and became much more bloodthirsty (Hedeager 1992, p. 92, 170, 22). Retainers seem to have served local chieftains in Denmark from c.. AD 200 on (Crumlin-Pedersen 1991, p. 42). Estates and powerful landlords seem to have emerged in Denmark in the 3rd century AD (Hedeager 1992, p. 199–201; Thrane & Porsmose 1996, p. 171–172). Hundreds, jurisdictional districts, were established in Denmark c. AD 200, probably by soldiers who had been in Roman service (Hedeager 1992, p. 189, 231, 248–249).

The new ownership of the land was accompanied by the introduction of innovations in land use, animal husbandry, and food production. Scythes for haymaking appeared in Scandinavia in the 3rd century AD (Pedersen & Widgren 1998, p. 358). Enclosed pastureland began to appear in Denmark and Eastern Sweden in c. AD 200 (Thrane & Porsmose 1996, p. 171–172; Pedersen & Widgren 1998, p. 292–306). Sheep and horse breeding seems to have emerged in Scandinavia in the 3rd century AD (Hedeager 1992, p. 160–161; Pedersen & Widgren 1998, p. 368). The earliest finds in Scandinavia of rotary querns, clay hearths, baking ovens and bread all date to c. AD 200 (Pedersen & Widgren 1998, p. 401).

About the same time specialised craftsmen and sites for crafts and trade emerged in Scandinavia (Storgaard 2003, p. 109). These were associated with the introduction of innovations in iron extraction, forging, and weaving (ibid.). Roman-standard carpentry seems to have been introduced about AD 200. A wooden plane was deposited at Vimose (Engelhardt 1869, p. 28). This tool from c. AD 200 is the earliest of its type in Scandinavia. Barrels appeared in Scandinavia as a high-status novelty after c. AD 200 (Lund Hansen 1995, p.

233–235). There were two-wheel carts in Denmark already in the Late Neolithic, but the earliest evidence of four-wheel wagons in Scandinavia is from the 3rd century AD (Pedersen & Widgren 1998, p. 338–339). A clinker-built ship found at Nydam in Jutland and dendrochronologically dated to c. AD 190 is the oldest true-clinker built vessel localised in northern Europe (Rieck 2003, p. 299).

There is no archaeological or historical evidence of sails among Germanic people in the Iron Age before the 8th century (Hårdh 1985, p. 182–183). A direct sea trade route was established, however, between the Danish Isles and the lower Rhine in c. AD 200 (Lund Hansen 1995, p. 385–388). This trade route with circumnavigation of most of Jutland would hardly have been viable without the use of sails. The earliest developed harbour in Scandinavia was established at Lundeborg on Funen in c. AD 200 (Jensen 1991, p. 133–135).

The Lundeborg site has evidence of the working not only of iron and bronze but also of silver, gold, and glass (P.O. Thomsen 1991, p. 138–140). This is the earliest Scandinavian evidence of silver and gold working. A measuring stick and scale pans have been found at Vimose on Funen (Engelhardt 1869, p. 30, 33). These finds of measuring gear are among the very earliest ones in Scandinavia and date to c. AD 200. Coins and gold to be used as payment have also been found at Lundeborg (J. Jensen 1991, p. 135, 140). A hierarchical system of long-distance trade centres emerged in Denmark in c. AD 200 when Roman objects arrived directly as trade goods from the lower Rhine to a leading long-distance trade centre in the Danish Isles (Lund Hansen 1995, p. 385–388).

Many innovations in technology and economy emerged in Denmark c. AD 200 according to the archaeological record. Innovations that appeared in other parts of Scandinavia at the same time but are not attested in Denmark at this early date probably also occurred in Denmark as it was the gateway to Scandinavia from the Continent and the Roman Empire. All these innovations occurred in the Roman Empire before they came to Denmark.

Storgaard proposed that the strong Roman

influences in Denmark and the Roman weapons in Denmark in c. AD 200 were the result of Zealand being a client or buffer state favoured by Roman supplies (2001). It is questionable, however, what attacks on the Empire a client state in Zealand would have been able to ward off. It is incredible that the Empire would have supported a distant Germanic group or area at a time when it seems to have been unable to provide necessary supplies for its own army in Roman parts of south Germany. Storgaard also argued that the aristocrats buried at Himlingøje in Zealand in about AD 200–250 would be of a dynasty that had ruled there since before the Marcomannic wars (2003, p. 112–120). They were, however, not buried according to the local tradition. The aristocrats of the 3rd century were interred in graves no longer visible in the landscape at a place where there had cremation burials under mounds in the 2nd century (Lund Hansen 1995, p. 191–195). The two male aristocrats interred at Himlingøje in the 3rd century also differed from those cremated there in the 2nd century in being remarkably gracile and among the tallest and most gracile males from the Iron Age in Denmark (Sellevold 1995). Storgaard has little archaeological support of his hypothesis that local people supported by the Roman Empire would have led the reorganisation that began in Denmark in about AD 200. This reorganisation was rather led by newcomers.

One thousand professional soldiers in chain mail, armed with long bows and damascened swords and mounted on horses or attacking in boats from the sea would have had the military strength to seize power in the whole of Denmark. In a much later conquest less than two hundred Spanish soldiers with only thirty horses managed to gain control of the Inca Empire.

The earliest runic inscriptions and their context
There are about 21 runic inscriptions that have been dated to AD 200/220–250/260 (in fact, phase C1b of the Roman Iron Age in northern Europe, but the corresponding dates AD are instead given in this paper; Krause and Jankuhn 1966; Ilkjær 1990, p. 324–325; Lund Hansen 1995, p. 17–18; Stoklund 1995). A fibula

found at Meldorf north of Hamburg and dated to the 1st century AD has inscribed characters similar to runes, but they may be Latin characters or just decoration (Düwel and Gebühr 1981). A two-layer bone comb found at Vimose on Funen has a runic inscription, and the few finds of this type of comb have been dated to c. AD 70–160 (Ilkjær 1990, p. 324–325; 1993, p. 297, 312, 376). Dating the inscription by such a typological dating of the comb is a questionable procedure. The rune-inscribed spearheads found at Øvre Stabu in Norway and at Mos in Gotland have previously been thought to date from the 2nd century AD, but they were associated with objects belonging to the period AD 200/220–250/260 (Ilkjær & Lønstrup 1982a, p. 58–59). There is no incontestable evidence of any runic inscription earlier than AD 200/220 (Stoklund 1995, p. 318).

Apart from single finds from Norway, Scania and Gotland, all runic inscriptions from the period AD 200/220–250/260 are from Denmark and the bog site of Thorsbjerg in Germany very near the Danish border. These runic inscriptions are from rich graves and from war booty depositions at e.g. Thorsbjerg and Vimose (Stoklund 1995). The runic inscriptions from war booty depositions were mainly carved on the weapons of professional soldiers. All five runic inscriptions from rich graves in Denmark from the period AD 200/220–250/260 are on gilt silver rosette fibulae (ibid.).

The rosette fibulae of Denmark are so similar that they may come from a single workshop (Lund Hansen 1995, p. 213). Lundeborg is the only place in Denmark where silver is known to have been worked in the period AD 200/220–250/260. The nearby cemetery of Møllegårdsmarken is the largest Iron Age cemetery in Denmark. It has about 1400 graves from the Roman Iron Age, only three of them being inhumation graves (Albrechtsen 1971; Stilborg 1997, p. 47–49). All the silver rosette fibulae with runic inscriptions come from inhumation graves (Werner 1988). Wet sieving has shown that many of the cremation graves at Møllegårdsmarken contained melted droplets of silver and gold (Stilborg 1997, p. 48–49; Thrane 1998, p. 221). It may thus be that silver fibulae

with runic inscriptions were destroyed in the funeral pyres at Møllegårdsmarken (Thrane 1998, p. 222).

An iron knife with a runic inscription has been found at Møllegårdsmarken in a cremation grave dated to c. AD 240–320 (Lund Hansen 1995, p. 18; Stoklund 1995, p. 340). Because iron knives are less likely than silver fibulae to have been objects of long-distance trade, this inscription is a particularly good indication of the early knowledge of the runic script in southeast Funen.

Lundeborg is unique in Scandinavia with its homogeneous occupation layer and absence of normal aisled houses. Weights, coins, gold to be used as payments, glass beads, shards of Roman glass drinking vessels and *Terra sigillata* pottery indicate that goods were directly imported to Lundeborg and then redistributed (P.O. Thomsen 1991). This settlement has the earliest evidence in Scandinavia of ship repair. Lundeborg and nearby Gudme formed a complex and very affluent centre that must have played a super-regional role in the western Baltic area from around AD 200. Because a greater number of rare and singular Roman imports have been found in the graves at Himlingøje in south-east Zealand than in the graves on Funen, it has been argued that Himlingøje rather than Lundeborg was the centre of long distance trade in the period AD 200/220– 250/260 (Lund Hansen 1995, p. 389). The richer grave finds on Zealand may, however, be a result of inhumation on Zealand and cremation on Funen. The ship repair and the abovementioned indications of direct imports to Lundeborg show that the trade centre was probably on Funen and not on Zealand.

The wealthy settlement of Gudme with its varied set of cult-related objects and probably a sacral king seems to have been an ideal place for rune carvers (Thrane 1998, p. 223).

The origins of the professional soldiers

The Thorsbjerg war booty deposition is the southernmost site with early runic inscriptions and may be of particular interest when deciding where the professional soldiers came from. The swords deposited at Thorsbjerg were probably of Roman origin. Likewise the shield bosses, breastplates, leather belts, textiles, garments, and horse equipment may have been from the Roman Empire (Bender Jørgensen 1986, p. 349–351; Carnap-Bornheim & Ilkjær 1996, p. 471–486). As the embossed sheet-metal objects at Thorsbjerg are of comparatively high quality they are likely to have been made in the Roman Empire (Carnap-Bornheim & Ilkjær 1996, p. 481). Ilkjær & Lønstrup (1982) indicated nine shield bosses of Roman provenance and three fibulae of a type known almost exclusively from an area between the Elbe and the Rhine and concluded that the army whose equipment was deposited at Thorsbjerg had originated between the Elbe and the Rhine. Three fibulae are a slim basis for such a conclusion.

More than 180 belt buckles of Roman origin were deposited at Vimose (Carnap-Bornheim 1992, p. 50). It was proposed that all these were imported. It may be questioned, however, whether belt buckles or complete belts were valued so highly in Scandinavia that they were traded in such great numbers over great distances. It may rather be that the belt buckles were parts of belts that were worn by 180 soldiers who ultimately came from the Roman Empire. The Vimose deposition is therefore also of interest in finding the origin of the professional soldiers.

Other items in the war booty depositions in Denmark are best explained by the arrival of a rather complete unit of the Roman army. There are working axes, planes, files, anvils, and more that probably represent army-attached craftsmen (X.P. Jensen et al. 2003, p. 324–325). There are bone saws, a surgical knife, a forceps, and sloe thorns from the armamentarium of the army surgeon (Fröhlich 2003). There are large dogs that probably helped the scouts of intelligence and reconnaissance units (X.P. Jensen et al. 2003, p. 325–326).

The weapons deposited at Thorsbjerg included 46 arrows and three broken longbows, one of which was still 165 cm long when it was found (Raddatz 1987, p. 69–74). The nearby site of Nydam has produced a plane for arrow shafts and arrow shafts with runes (E. Jørgensen

& Vang Petersen 2003, p. 272; Stoklund 2003, p. 176). The long and carefully manufactured bows found at Thorsbjerg were probably made by artisans specialised in bow making (Jankuhn 1979, p. 348). Since the bow does not seem to have been a weapon among any Germanic people in pre-Imperial time and hardly in the Early Roman Iron Age either, the emergence of long bows after c. AD 200 is surprising (*Reallexikon der germanischen Altertumskunde* 1978, p. 164; X.P. Jensen et al. 2003, p. 316, 319). Certain Oriental auxiliaries are the only soldiers depicted with large (Scythian) bows on Trajan's column (Rausing 1967, p. 100). Auxiliary troops from the provinces used the bow, but otherwise it was hardly used at all in the Roman army until attempts were made to propagate its use by the end of the 2nd century (ibid. p. 100–101). All Roman units with Scythian bows in Early Imperial times seem to have been recruited from Syria and Roman Arabia (Walke 1965, p. 55–56).

The use of triangular arrowheads was connected with the use of the Scythian bows (ibid.). Whereas south of the Danish areas arrowheads were typically broad and leaf-shaped, arrow points with triangular and rectangular cross-sections are most common in the Nordic area (X.P. Jensen et al. 2003, p. 319–320). Arrowheads with triangular cross-sections have been found at Vimose, in one of the richest graves at Himlingøje, and at other places on Zealand (Lund Hansen 1995, p. 245). The only Roman army units equipped with Scythian bows and triangular arrowheads and stationed on the Rhine or the Upper Danube in Early Imperial times were *Cohors I Flavia Damascenorum* from Syria at Friedberg in Hessen, *Cohors I Ituraerorum* from Roman Arabia at Mainz, and the *Canatha* cohort (Stein 1932, p. 180, 188, 199; Walke 1965, p. 55–56). The professional archers who used the long bows found at Thorsbjerg and the triangular points found at different places in Denmark had probably served in one of these three units. Military diplomas indicate that while *Cohors I Ituraerorum* left Germany already in AD 88 the Damascus cohort remained at Friedberg until at least AD 134 and the *Canatha* cohort at Straubing until at least AD 166.

The parade armour found at Thorsbjerg includes a cavalry bronze helmet decorated with two serpents (Raddatz 1987, p. 57). Singular bronze helmets, each one decorated with a pair of serpents and an eagle on the top, have been found at Brigetio in Hungary, at Heddersheim near Frankfurt, and decontextualised in a collection in Hungary (Thomas 1971, p. 11–13). The top part of the Thorsbjerg helmet has no eagle but instead a circular hole with an inlaid ornamented plate (Raddatz 1987, p. 57). The circular hole and the inlaid plate may perhaps be a repair made after an eagle was broken off. The contemporary Vimose war booty deposition is located less than 50 km from Gudme and has yielded a cast and chased bronze griffin head in Roman style that has traces of solder and once probably adorned a helmet (Engelhardt 1869, p. 12, pl. 4). The feather decoration covering the head of the Vimose griffin is so similar to the feather decoration covering the eagles' heads in Hungary that the three heads must be very closely related. Filigree work is also represented on all three birds' heads. The helmets found in central Europe were probably of Oriental origin (Thomas 1971, p. 13).

The Thorsbjerg war booty deposition also included a gilt and silvered face mask made of silver and bronze (Raddatz 1987, p. 59). Apart from finds at Straubing and Kelheim on the upper Danube in south Germany (Menghin 1985, p. 186), gilt bronze or silver masks are rare north of the Alps. This find suggests that the professional archers at Thorsbjerg and in Denmark came from Straubing rather than the Rhine *limes*.

The Vimose deposition has yielded a plenitude of parade swords. Many of the sword hilts and chapes from Vimose are richly decorated with silver, gold, and ivory, probably of Asian elephant (Engelhardt 1869, p. 14–17). The swords deposited at Thorsbjerg seem to have been decorated in a similar way, but they have been less well preserved in the acidic environment (Ilkjær 1993, p. 477–478). The parade swords have a parallel in parade armour from Straubing. Straubing has yielded finds of parade armour that are unique in all of the Roman Empire (Keim & Klumbach 1951, p. V). The

Straubing finds include gilt bronze masks of Oriental type, non-gilt bronze masks of Hellenistic type, decorated knee and shank guards, and decorated plates of gilt and silvered horse head armour (Keim & Klumbach 1951).

A Vimose sword richly decorated with inlaid gold and a ring-shaped pommel (*Ringknaufschwert*) is so similar to swords found on the upper Elbe in Bohemia and at Straubing that the three swords were probably manufactured in the same workshop (Hundt 1953). Swords with rings on their handles (*Ringknaufschwerter*) have been found in Germanic Europe only along a narrow trail from Straubing, the Bohemian basin and along the Elbe up to south Jutland and Funen (Menghin 1985, p. 182; Kaczanowski 1994). While most *Ringknaufschwerter* have been found in Roman Central Europe, an unpublished sword found in Hauran in Syria also seems to be of this type (Biborski 1994; Lund Hansen 1995, p. 386–387). The *Canatha* cohort was recruited in Hauran. Miniature *Ringknaufschwert* pendants known from the Roman province of Upper *Germania* may reasonably be considered as symbols of imperial power and would have been worn by high officers (Oldenstein 1976, p. 152–157). It is a strange fact that no *Ringknaufschwert* pendants have been found in *Raetia* though some original *Ringknafschwerter* have been found there (ibid.). It could perhaps be that most high officers at Straubing in Raetia left the province when the living conditions deteriorated there by the end of the 2nd century. One *Ringknaufschwert* pendant has been found at Vimose and probably did not come there as a result of trade (ibid.). It was proposed to have been brought there as booty but may rather have been worn by a high officer that came to Denmark. X.P. Jensen stated that all the six *Ringknaufschwerter* found at Vimose would have been deposited there in the decades around AD 150 while the great majority of the 300 swords represented at Vimose would have been deposited there in the early 3rd century (2003, p. 226–231). Because no archaeological reason was given for this dating, it may rather be that the high officer's *Ringknaufschwerter* were deposited at the same time as

most of the Vimose swords. There is no reason to believe that the Straubing *Ringknaufschwert* was earlier than the very late 2nd century (Biborski 1994, p. 91). The Himlingøje silver goblets depicting *Ringknaufschwerter* were buried only in the 3rd century (ibid., p. 228).

Chain mail from Roman times has similarly been found in Germanic Europe only in the Elbe area and South Scandinavia (Kaczanowski 1994). Chain mail was used by Orientals and Celts but not by the Romans (*Nationalencyklopedin* 1995:16, p. 95). The distribution of *Ringknaufschwerter* and chain mail indicates that the professional archers at Thorsbjerg and in Denmark would have come from Straubing rather than Friedberg or Mainz on the Rhine *limes*.

An embossed sheet metal phalera found at Thorsbjerg has representations of hippocampi, dolphins, and serpents (Raddatz 1987, p. 63). Hippocampi never appear in Scandinavian waters but occur in the Mediterranean and mainly live in tropical waters such as the Red Sea. Dolphins and serpents were the most commonly represented animals beside eagles in Nabatean art (Glueck 1966, p. 315–357, 471–491). The phalera was a 'provincial' Roman military order. Its ornamentation suggests that it belonged to a soldier from Roman Arabia. Chest fittings found at Straubing are shaped like dolphins (Keim & Klumbach 1951, p. 41, fig. 45; Walke 1965, p. 156, fig. 115). A Vimose fitting (Engelhardt 1869, p. 16, fig. 9) is very similar. A Vimose girdle also has a dolphin decoration (ibid., pl. 11).

Gold finger rings with serpent heads occur at Thorsbjerg and are clearly associated with the very richest graves from the period AD 200/220–250/260 in Denmark (Lund Hansen 1995, p. 229). There are also a few earlier pieces from northern Germany, Thuringia and on the upper Elbe in Bohemia (ibid., p. 210–212). A bronze ring with a serpent head and a gold finger ring with a serpent head have also been found at Straubing (Walke 1965, p. 53). The gold finger rings with serpent heads should be related to the bracelets with serpent heads (Lund Hansen 1995, p. 206). These probably had Roman models because the bracelets in both groups were made of gold, had terminals

in the form of animal heads, and were marks of distinction in a warrior context (ibid.). Because gold finger rings with serpent heads presumably also had Roman models, it is of interest that Straubing is the only Roman site known to have produced a gold finger ring with a serpent head.

Fibulae found at Thorsbjerg are decorated with a method remarkably similar to that of a hinge fibula found at Straubing (Walke 1965, p. 51). Swastika fibulae occur in the same area as the rosette fibulae with early runic inscriptions (Lund Hansen 1995, p. 215–216). Most finds are from Zealand and the earliest piece may be from Himlingøje and date to the period AD 200/210–250/260 (ibid.). The form may go back to provincial Roman swastika fibulae (ibid.). A silvered swastika fibula was found at Straubing and may date to about the 2nd century AD (Walke 1965, p. 148).

Many shield bosses found at Thorsbjerg are similar to a parade shield boss found at Straubing (Thomas 1971, p. 38–41; Raddatz 1985, p. 34–57). One of the Thorsbjerg shield bosses has the site's only inscription in Latin characters of a name, viz. AEL. AELIANUS (Raddatz 1987, p. 43). Aelius is the only attested name of the last known commander of the cohort that was stationed at Straubing, and he was commander there in AD 162 (Stein 1932, p. 284–286).

Thorsbjerg has not yielded a single Scandinavian strike-a-light. The strike-a-lights from Thorsbjerg may have come from a Germanic area between the Weser in the west, the Vistula in the east and the upper Danube in the south (Ilkjær 1993, p. 254–256). Strike-a-lights were hardly traded over any great distance but rather transported as part of the owners' personal equipment. This excludes the possibility that the professional archers at Thorsbjerg would have come from the Rhine limes but is consistent with their coming from Straubing. Long swords with inlaid metal figures from the late *limes* era were studied by Ulbert (1974). The swords found at Straubing and Nydam are uniquely similar in that their ratio between length and width is 17:1 and that the inlaid metal figures are a highly stylised Victoria. Other swords with inlaid Vicoria figures (and no other

figure) have been found at Illerup in Denmark and Øvre Stabu and Rør in Norway. We may now consider that Nydam and Illerup have yielded more objects with early runes than any other sites except Vimose, and that Øvre Stabu is the only site in Norway with a runic inscription dated as early as c. AD 200. Three of the four non-Roman sites with Victoria swords are thus unusually closely tied to early runes, while this type of Roman sword has been found at no Roman site apart from Straubing. This traces the origin of the inventor(s) of the runes to Straubing rather than other places in the Roman Empire.

Conclusions

Most of the Germanic runes had Latin models. However, Nabatean characters explain, better than Latin ones, the forms and sound values of the five runes $\flat$ θ, χ g / 3, $\P$ w, ℓ j, and $\top$ z and perhaps also those of runic K p, $\sqcap$ e, $\sqcap$ m and l l. There seem to have been good reasons for Nabatean models having been used instead of Latin ones in most of these cases.

Nabateans probably constituted the main part of a cohort of a thousand archers stationed at Straubing in Bavaria in c. AD 125–200. Indications of unusually intensive writing for an auxiliary camp and inscriptions with unusually many rune-like letters suggest that the runic script could have been developed by some of these auxiliaries.

At the time when this *Canatha* cohort left Straubing, about AD 200, professional soldiers who had been in Roman service appeared in Denmark and thoroughly reorganised society. They seem to have established themselves as a ruling nobility and introduced many innovations in e.g. animal husbandry, food production and carpentry. They probably introduced ship-building, the working of silver and gold, and a hierarchical system of long-distance trade centres.

The earliest runic inscriptions are likewise dated to about AD 200. They were inscribed on the weapons of professional soldiers. They were carved on silver fibulae that were probably produced at the technological and economic

centre on Funen. The earliest runic inscriptions were intimately connected with the arrival of professional soldiers from the Roman Empire.

The professionally made long bows at Thorsbjerg and the triangular arrowheads found in Denmark probably represent professional archers from the Roman army. The only professional archers on the Rhine and Upper Danube *limes* were in three cohorts from Syria and Roman Arabia. Two of them were on the Rhine *limes* and the third one was the *Canatha* cohort at Straubing. The distribution of chain mail, *Ringknaufschwerter* and silver masks indicates that the professional archers at Thorsbjerg are much more likely to have come from Straubing than from the Rhine *limes*. The distribution of other kinds of weapons and objects related to the professional soldiers corroborates this finding.

It may be concluded that the runic forms and the archaeological material point in the same direction. The forms of some runes are best explained by Nabatean models. The archaeological and historical material indicates that Nabateans who had served in the Roman army probably reorganised the society in Denmark and introduced the runic script there c. AD 200. There is not enough evidence to say whether the runic script was invented at Straubing, on Funen, or somewhere else.

A comprehensive discussion of the origin of the *futhark* should go beyond the origin of the runes. It should include the origin of the rune names and the order of the runes in the *futhark*. These issues will be dealt with in a forthcoming paper.

Acknowledgements

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Sammanfattning

Ett semitiskt ursprung till några runor
Inflytelserika främlingar i Danmark ca. 200 e. Kr

De flesta germanska runor hade latinska förebilder men en del runor kan inte på ett övertygande sätt härledas från latinska bokstäver. Bokstäver av den nabateiska varianten av det arameiska semitiska alfabetet kan bättre än latinska bokstäver förklara form och ljudvärde

hos de fem runorna ᚦ θ , ᚷ *g /ʒ* , ᛃ *w, ȝ j*, och ᛏ *z*. Kanske också hos ᚲ *p*, ᐁ *e*, ᛘ *m* och ᛚ *l*.

Det nabateiska riket omfattade ungefär nuvarande Jordanien och Sinai, men ockuperades av romarna 106 e.Kr. och blev provinsen *Arabia.* Nabatéer utgjorde troligen huvuddelen av en kohort med 1000 bågskyttar som stationerades vid Straubing i Bayern ca 125 e.Kr. Vid utgrävningar har man där påträffat anmärkningsvärt många skrivdon och inskriptioner, varav ovanligt många med runliknande bokstä-

ver. En gammal handelsled till Skandinavien korsade Donau vid Straubing. Kohorten med tusen beridna bågskyttar torde ha lämnat Straubing ca 200 e.Kr. då det tycks ha blivit problem med försörjningen i Sydtyskland.

Professionella soldater som varit i romersk tjänst framträdde i Danmark ca 200 e.Kr. och omorganiserade samhället i Danmark. De tycks ha etablerat sig som en härskarklass och byggt upp ett hierarkiskt system för handeln med Romarriket. De införde troligen skeppsbyggeri, ädelmetallbearbetning och innovationer inom boskapsuppfödning och livsmedelsproduktion.

De äldsta runinskrifterna framträdde också ca 200 e.Kr. De finns på professionella soldaters vapen och på fibulor av silver.

De professionellt tillverkade långbågarna från Thorsbjerg och de triangulära pilspetsar som påträffats i Danmark härrör troligen från bågskyttar i den romerska hären. Sådana fanns vid gränsen mot germanernas områden endast hos två kohorter vid Rhen och hos kohorten vid Straubing. Utbredningen av bl.a. ringbrynjor, *Ringknaufschwerter* och silvermasker tyder på att bågskyttarna i Thorsbjerg kom från Straubing snarare än från Rhengränsen.

Slutsatsen är att runformerna och det arkeologiska materialet pekar i samma riktning. Några runors former förklaras bäst av nabateiska förebilder. Det arkeologiska och historiska materialet visar att nabatéer som tjänstgjort i romerska armén troligen omformade samhället i Danmark och introducerade runskriften där ca 200 e.Kr.