NAVIGATION

THE MARITIME ITINERARY OF THE TAX REGISTER OF KING VALDEMAR SEJR OF DENMARK (1202–1241)

BY CHRISTER WESTERDAHL

Introduction

The present author has been expressing views on this sailing route description since at least 1975 (Westerdahl 1978, 1984). This time a more definite appraisal of its function will be given.

I have ever since been comparing the character of the Danish itinerary in the Liber Census Daniae with my principal theme, which is the reconstruction of a medieval sailing route system in the north part of the Baltic Sea, i.e. Swedish Norrland (cf. Westerdahl 1986, Westerdahl 1987–89 etc.). The south part of my non-itinerary route coincides with the last point mentioned in the tax register at the Swedish coast (fig. 1) before the sailing route leaves the Swedish lands for Åland and Finland. The very choice of survey area depends from the beginning on this fact. My route is to some extent to be regarded as a deviation from the great international route to the Bay of Finland, the theme of the Danish text, whichever other analytical opinions may prevail.

The itinerary of the tax register of King Valdemar Sejr is even in other aspects a most valuable source. Excepting the lapidary notes of the Anglo-Saxon king Alfred the Great c. AD 900 this itinerary is the first of its kind in northern Europe (cf. in this forum Schnall 1981). The notes mentioned concern the journeys of two traveller merchants of the Viking Age, the northern Norwegian Óttar (Anglo-Saxon *Ohthere*) and *Wulfstan*, another sailor of dubious extraction (possibly an Anglo-Saxon, since certain traits of the translation of this part indicate that Alfred – if the king indeed supervised the scribe or even made the work himself – had less problems to transcribe that part of the conversation and even turns to direct speech [cf. Fell in Lund 1984:57]. If transcribed from a Scandinavian form this name would originally read *Ulfsteinn*, which is not quite implausible). The background interest could possibly be the same in both cases. We are sure of Alfred's intention to know more on the geography of Europe. But although a related ambition may exist behind the account of the tax register itinerary we can-
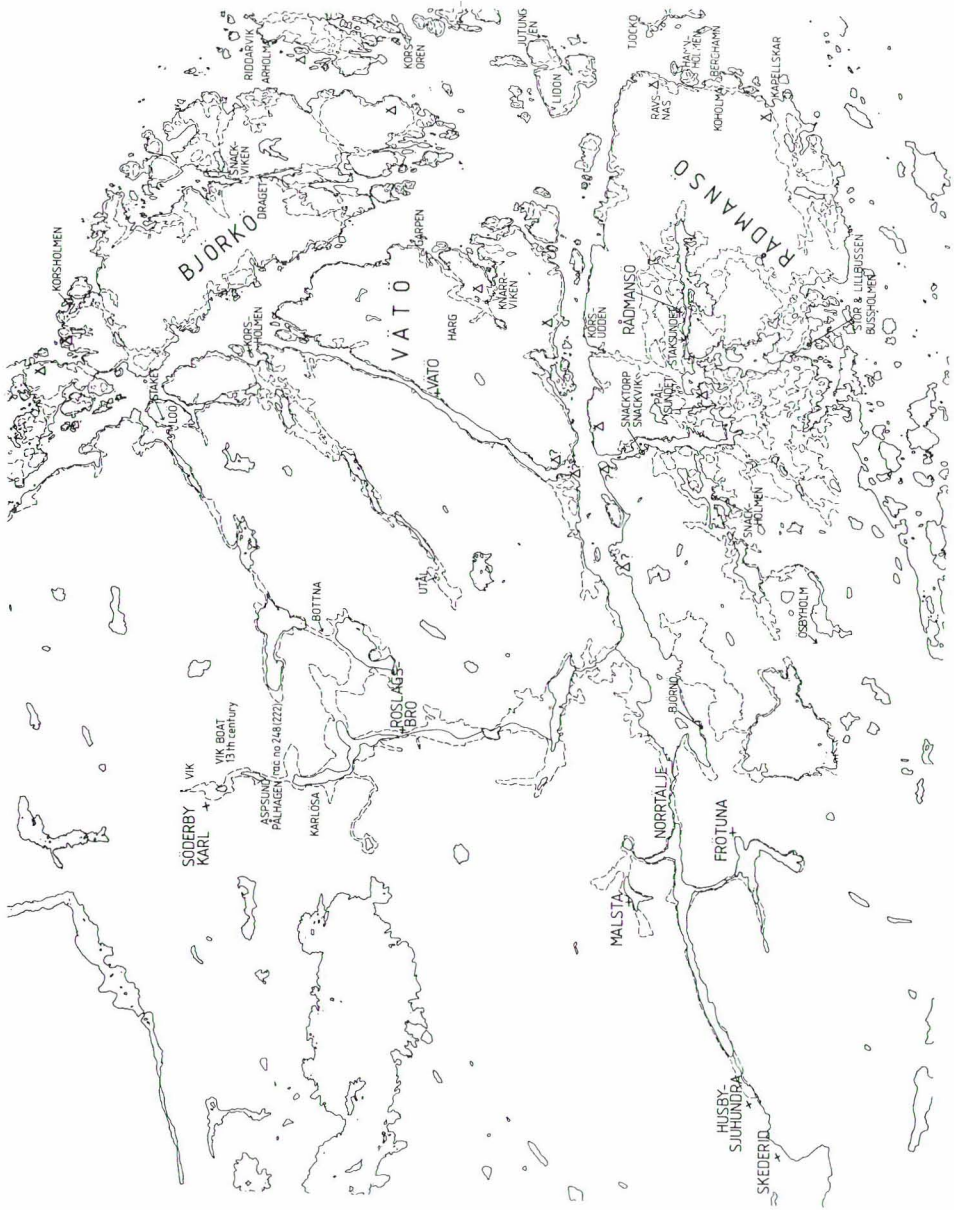
Fig. 1   *Map of the area where the take-off points of the itinerary are to be found for the crossing of the Sea of Åland. It is at the same time the limit of the survey of the Norrland coast of the author 1975–80. The height curves are those of 5 m above sea level. The low-lying section criss-crossed by curves in the south, making Rådmansö an island during the Middle Ages, is the* krampesund *strait as localized by Axel Härlin (1936, 1942). The initerary also mentions* weddesund *which in this case refers only to the arrival at the entrance to the channel of Vätösundet, not to an accomplished passage through it. The last point on the Swedish side is Arholma (*arnholm*) in the northeast of the map area.*

Fig. 2 *The first part of the itinerary section of the Liber Census Daniae, covering the Mediterranean route description. Sheet 127. Rigsarkivet, Copenhagen*

not be sure of anything in this connection. Next to nothing is known on its background, nor of its function. This discovery makes it imperative not to generalize the significance of this very rare instance of a sailing route description. The absence of such source criticism has in fact meant the gradual acceptance of the itinerary text as the norm for high medieval shipping in the Baltic. Although the approach of the inquiry is from the point of view of a marine archaeologist, it has accordingly been necessary to switch to a n a l y s i s of the text itself. What does it actually say? And what about its structure in itself? According to the views of the present author this is the inevitable consequence of an unknown historical background where no experience can be generalized.

The itinerary briefly describes by naming certain places and sometimes the distances in between a thorough-going one-way route or route system from *utlengi* (present Utlängan) in Swedish Blekinge (then a part of Denmark) to *raeuelburgh* (Reval, present Tallinn) in Estonia. The mention of these place names in fact mostly means their first recorded occurrence. The comparative wealth of such names furthermore permits a reconstruction in some detail reminding of the first sailing route representations on elementary maps c. 1650–1750 in Scandinavia. As will be seen, however, its actual merits for this particular purpose are fairly problematical. Nevertheless, it is obvious that the route delineated in a would-be reconstruction is

almost identical to present traditional coastal sailing routes of which records reach back at least to the 16th century. To this extent, therefore, some measure of general usage is implied.

For us to be able – with the purpose stated above – to draw any conclusions at all on the interior structure, possibly even function, the itinerary will be given in extenso with an analyzing translation providing alternative identifications and interpretations. This account relies heavily on the excellent work by the amateur Swedish scholar Axel Härlin (1942). The text is followed according to the photos of the original manuscripts of Rigsarkivet, Copenhagen, sheets 127–129 (figs. 2–4).

The relevant text in fact starts with a simple itinerary for the route from Ribe of Jutland to the Crusader town of Akkon of Syria, already found in the late 11th century history work of Adam of Bremen (cf. Adam 1978: scholion from a date not much later than the main text itself, c. AD 1075, p. 437; Morcken 1989: 56f., 73f.). The immediately following Baltic description is strictly our itinerary and found exclusively in the tax register. For the sake of the general context it has been considered important that also the former is quoted and translated here:

De ripa in flandriam ad cinkfal uelificari potest ij diebus et ij noctibus. De cinkfal ad prol in angliam ij diebus et i nocte. Illud est ultimum capud anglie uersus austrum et est processus illuc de ripa angulosus inter austrum et occidentem. De prol in brittanniam i die ad sanctum ma-
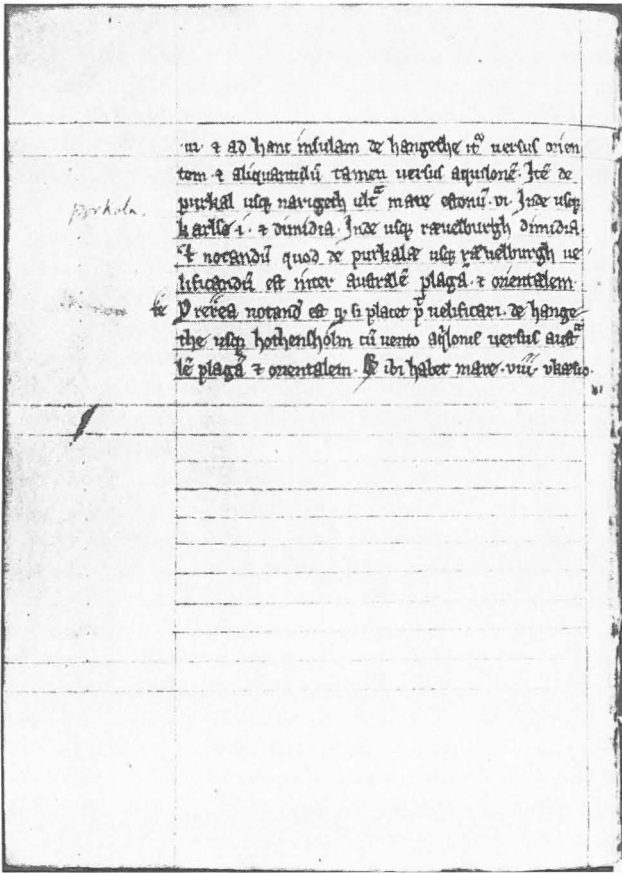
Figs. 3–4   *The Baltic itinerary of the Liber Census Daniae. Sheets 128/129. Rigsarkivet, Copenhagen*

thiam. Inde ad far iuxta sanctum iacobum iij diebus et iij noctibus. Inde ad leskebone ij diebus et ij noctibus et totus est iste processus angularis inter austrum et occidentem.

De lekebone ad naruese iij diebus et iij noctibus angulariter inter orientem et austrum. De Naruese ad arragun iiij diebus et iiij noctibus, angulariter inter aquilonem et orientem. Inde ad barzalim i die. similiter inter aqu[i]lonem et orientem. De barzalim ad marsili i die et i nocte. fere uersus orientem. declinando tamen parum ad plagam australem. De marsili ad mezin in sicilia iiij diebus et iiij noctibus angulariter inter orientem et austrum. De mezin ad accaron xiiij diebus et totidem noctibus. inter orientem et austrum magis appropinquando ad orientem.

De utlengi usque calmarne x ukæsio. Deinde usque skægge nes ii ukæ. Hinc usque waldø iiii et si placet ire per latus terre potest ire de waldø usque runø. queque distat a waldø ad i ukæsio. Inde usque klineskær uel diuræholtsnub i. Inde usque geishammer i. Inde usque roxhammer i. Inde usque æfra i. Inde usque winø i.

[D]e kalmarne usque dyur ix. Hinc usque winø iii. Hinc usque sporæ iii. Hinc usque hambræ ii et unum cum hambræ. Hinc usque askø i et per askø i et de askø usque quetnæ i. Hinc usque ørsund ii. Hinc usque wæggi i et per wæggi i. Inde usque ulfsund i. Hinc usque rotæsund i. Inde usque alrecki ii. Hinc usque brawic i. Brawic durat in longum vi ukæsio. Primo cum pertransitur trans brawic occurrit quedam insula winterclasæ nomine. et tunc alør. Deinde rugø. Deinde

rinzø. deinde leckæ. Deinde askø. deinde ræueskiær. Deinde thorø. Deinde hærihammær. De–
— usque mæthelsten ii. Inde usque alæsnap ii. Inde usque gardø ii. Inde usque windø i. et cum
windø ii. et a windø uersus austrum iacet rudmi. Inde uthøi. deinde mæthelsten. deinde nutarn.
Deinde olæ. deinde ornæ. Inde —— neffø. Inde rudmi. Inde strømsø. Inde eldø. Inde sandø.
Inde brunsø. Inde enkø. Inde hærø. Inde stefsø. Inde myghi. Inde særsør. Inde husarn. Inde
enlang. Inde linter. Inde sicmar. Inde finør. Inde øslæ. Inde hoxhals. Inde widør. Inde ræfnes.
Inde arnholm.

Et ultra brawic usque fimersund ii. Inde usque ørsebac usque rugø i et per rugø i. Inde usque
stendor sund. Inde usque siuiæ sund i. Inde usque hafø i. Inde usque fifang i. Inde usque swe-
ther sund i. Inde usque ekiholm i. Inde usque oslæsund et per oslæsund i. Inde usque ikernsund
i. Inde usque gardø i. Inde usque dalernsund i. Inde usque harustik i. Inde usque litle swethi-
uthæ i. Inde usque stokholm i. et de litlæ swethiuthæ usque wiræsund i. Inde usque malægstagh
i. Inde usque krampe sund iii. Inde usque weddesund i. Inde usque arnholm ii. Atque notan-
dum est quod processus de utlengi uersus arnholm magis habeat se ad aquilonem quam ad
orientem.

[D]e arnholm transmare aland usque lynæbøthæ vi. Inde usque thiyckækarl viii. Notandum
est quod inter thiyckækarl et linæbøtæ multe iacent insule fyghelde nomine. Inde usque aspæ-
sund vi et ibi sunt tres insule quarum una est aspø secunda refholm. iii: a malmø. et iurima iacet
ultima ab eis uersus australem plagam et proxima mari. De aspø usque ørsund vi. Inde usque
hangethe iij et notandum est quod de arnholm usque lynæbetæ itur medio inter orientem et
aquilonem et si prosper est uentus ab occidente potest uelificari directa linea de arnholm usque
hangethe et de hangethe que finnice dicitur cuminpe usque lowicsund ii. Inde usque karien-
kaskæ i. Inde usque iuxaræ ii. Inde horinsaræ quod danice dicitur hestø ii. Inde usque purkal iii.
et ad hanc insulam de hangethe itur uersus orientem et aliquantulum tamen uersus aquilonem.
Item de purkal usque narigeth ultra mare estonum vi. Inde usque karlsø i et dimidia. Inde us-
que ræuelburgh dimidia. Et notandum quod de purkalæ usque ræuelburgh uelificandum est in-
ter australem plagam et orientalem. Præterea notandum est quod si placet potest uelificari de
hangethe usque hothensholm cum uento aquilonis uersus australem plagam et orientalem. At-
que ibi habet mare viii ukæsio.

Translation by the present author, assisted by a specialist of medieval Latin, Dr. Göran Bäärn-
hielm, Stockholm:

From *ripa* (Ribe) to *flandria* (Flanders) and *cinkfal* (Zwin at Sluys) you can sail in two days
and two nights. From *cinkfal* to *prol* (Prawle Point) in England two days and one night. This
is the utmost point of England to the south and it comes forth of a peaked coastline in a direc-
tion between south and east. From *prol* in *brittannia* one day to *sanctus mathias* (S:t Mathieu).
Further on to the light (-house; *far* at El Ferrol) close to *sanctus iacobus* (Santiago de Com-
postela, Galicia) three days and three nights. Further on to *leskebon*[e] (Lisbon) two days and
two nights and as a whole this voyage is in the angle between south and east.

From *leskebon*[e] (Lisbon) to *naruese* (Strait of Gibraltar, *tarifa;* the old Norse name is
Njörvasund) three days and three nights in the direction between east and south. From
naruese to *arragun* (Tarragona) four days and four nights, with a course angular between
north and east. Further on to *barzalim* (Barcelona) one day in the same way between north
and east. From *barzalim* to *marsili* (Marseille) one day and one night. Here you turn to the east
and somewhat to the south. From *marsili* to *mezin* (Messina) in Sicily four days and four
nights in direction between east and south. From *mezin* to *accaron* (Akkon) fourteen days and
as many nights. Between east and south you now ought to approach against the east.

The Baltic itinerary proper

Section 1
From *utlengi* (Utlängan, an island in the outer archipelago of the then Danish province Blekinge) to *calmarne* (the town of Kalmar, Småland, Sweden) 10 *vikusjöar* (in Swedish, which distance measure will henceforth be abbreviated vs.; in fact this distance will rather add up to 11 vs.). From there to *skæggenes* (the promontory of Skäggenäs, with the portage site Draget at the waist) 2 vs. From there to *waldø* (Vållö island) 4 vs. (in reality 5?). If you want to follow the coastline (cf. the comments on the ideas of Nils Blomkvist 1979) you can go by way of *waldø* to *runø* (the island of Runnö), situated 1 vs. from *waldø*. From there to *klineskær* (unknown as a present place name; probably once Klämnaskär after Klämna, a farm S Oskarshamn) or *diuræholtsnub* 1 vs. From there to *geishammer* (or *gershammer*, unknown as a place name, obviously close to present Fittjehammar NE Oskarshamn) 1 vs. From there to *roxhammer* (present Uthammar promontory, on the nautical chart of Giedda in 1695 called Rookhammarsudd) 1 vs. From there to *æfra* (Ävrö island) 1 vs. From there to *winø* (Vinö island) 1 vs.

After this section the sailing route between Kalmar town and Bråviken bay of Östergötland is summarily described, with a sudden jump between Kalmar and *diuræholtsnub* (cf. above), without following, as told above, the coastline: *ire per latus terre*. Accordingly, you are supposed to go in a straight northerly direction towards the promontory of this name, abbreviated *dyur,* or maybe, further on to e.g. *geishammar* or perhaps rather *roxhammer* (above, cf. comments below).

Section 2
From *kalmarne* (Kalmar) to *dyur* (*diuræholtsnub* above) 9 vs. From there to *winø* (Vinö island) 3 vs. (ought to be 4 vs., cf. above).

From there to *sporæ* (Spårö island at the entrance of the town of Västervik, Tjust, Småland) 3 vs. From there to *hambræ* (unknown, but would at present be Hammar, i.e. Loftahammar, with the outer harbour basin called Hallmare skackel) 2 vs. and 1 vs. along *hambræ* (possibly into the haven and out?). From there to *askø* (Stora Askö island) 1 vs. and past (or possibly through, meaning the inner route inside Stora Askö) *askø* 1 vs. and from *askø* to *quetnæ* (Kvädö island) 1 vs. From there to *ørsund* (unknown as a present place name, probably the straits Bar[ö]sund or Bussund; or possibly an unnamed strait between Årsviken, N the parish church of Gryt and the strait Fårströmmen in the south, the latter improbable alternative being proposed by Härlin 1942) 2 vs. From there to *wæggi* (Väggö island) 1 vs. and past *wæggi* 1 vs. From there to *ulfsund* (Olsösundet strait or the route called Olsundsleden at present, in the later case in an inverted order) 1 vs. From there to *rotæsund* (Rotsundet strait) 1 vs. From there to *alrecki* (Arkö[sund] strait) 2 vs. From there to *brawic* (Bråviken bay, outer part) 1 vs. The length of *brawic* is 6 vs.

Then follows what Härlin (1942) calls the outer route to Runmarö:

Section 3
After having traversed *brawic* (Bråviken bay) you first reach an island by name *winterclasæ* (islet and sighting point Vinterklasen) and thereafter *alør* (Ålö island). After that *rugø* (Rågö island), after that *rinzø* (Ringsö island), after that *leckæ* (Lacka island). Thereafter *askø* (Askö islands). Thereafter *ræueskiær* (Revskär island). Thereafter *thoræ* (Torö island). Thereafter *hærihammær* (Herrhamra promontory on Torö island, inside Öja/Landsort island).

Section 4

From *(hærihammær)* to *mæthelsten* (Mellsten islet) 2 vs. Thereafter to *alæsnap* (Älvsnabben, island with a protected haven basin) 2 vs. Thereafter to *gardø* (present Gålö, peninsula, formerly island). Thereafter to *windø* (Vindö island) 1 vs. (in reality 4–5 vs.) and past *windø* 2 vs. (possibly inside Vindö, which passage in that case refers to the old inner sailing route past Djurhamn/Djurö harbour to the northern approaches to Stockholm. Not until 1616 the outer route by name of Kanholmsleden [the Kanholmen route] was established along the outer coast of Vindö; Hedenstierna 1949: 267), to the south (rather the southeast) lies *rudmi* (Runmarö island).

Farther on the route along the islands east of the sailing route Mellsten–Runmarö:

Section 5

Further comes *uthøi* (Utö island), further *mæthelsten* (Mälsten[Mellsten] islet), further *nutarn* (Nåtarö island). Further *olæ* (Ålö island), further *ornæ* (Ornö island). Further *neffø* (Nämdö island). Further *rudmi* (Runmarö island, mentioned as the last above).

Then comes the Husarö sailing route Runmarö–Arholma, the southern part:

Section 6

Further *strømsø* (unknown place name, possibly present Berghamn?). Further *eldø* (Stora Jällö, earlier Ellö, the additive j- a normal dialectal pattern). Further *sandø* (unknown, possibly the eastern part of Södra Stavsudda island, or Sandön island at Sandhamn, one of the present entrances to Stockholm and to the archipelago from the outside, however in that case being misplaced in the order of place names). Further *brunsø* (unknown, possibly Brunskär NE Träskö/Storö islands).

Then follows, according to Härlin (1942) an alternative, more easterly route. However, I rather believe that the route passes, as would be normal, inside of Runmarö–Möja:

Section 7

Further *enkø* (metathesis of Eknö?). Further *hærø* (Harö island). Further *stefsø* (Steflö? Stavsudda? Stöfvelö/Lökaö, NE Bockö?). Further *myghi* (Möja island).

If my proposition above is taken to be correct this is no separate section. The two last "sections" appear funny, with their names of places situated – as it seems – unduly close to one another. However, I still stick to Härlin's sectional divisions:

The Husarö sailing route Runmarö–Arholma, northern part:

Section 8

Further *særsør* (Särsö island). Further *husarn* (Husarö island). Further *enlangi* (Östra Lagnö promontory of Ljusterö islands). Further *linter* (at present unknown, cf. Linken, a farm on S Blidö island, possibly referring to a disappeared topographical name of the southern part of Blidö?). Further *sicmar* (Sikmarö island). Further *finør* (unknown, cf. Fånö, an earlier name of the mansion of Blidö, possibly referring, like Linken/linter above to a former topographical name denoting the central part of Blidö?). Further *øslæ* (Yxlan island). Further *hoxhals* (Oxhalsö island, with a dialectal initial h- cf. Jällö above, instead of Eldö). Further *widør* (unknown, cf. Sidö, a mansion at Riddersholm, Rådmansö, possibly from the outset a topograph-

ical name of the southern promontory of the once island of Rådmansö). Further *ræfnes* (Rävs-näs, promontory or point N Kapellskär). Further *arnholm* (Arholma island).

Then follows suddenly the route from Bråviken bay to Stockholm on the inner side of the archipelago:

Section 9

And from this side of *brawic* to *fimersund* (Femöresund strait outside of Oxelösund) 2 vs. From there to *ørsebac* (Örsbaken bay) to *rugø* (Rågö island) 1 vs. and past *rugø* 1 vs. From there to *stendor sund* (Stendörren strait, at Krampö island, cf. *krampe sund* at Rådmansö below and the discussion on identifications). From there to *siniæ sund* (Säv[ö] sundet, strait) 1 vs. From there to *hafø* (unidentified, but could refer to Hänö island outside of Trosa town) 1 vs. From there to *fifang* (Fifång island) 1vs. From there to *swether sund* (Svärd[sö]sund[et] strait) 1 vs. From there to *ekiholm* (Ekholmen island) 1vs. From there to *oslæsund* (Yxlösund strait) 1 vs. and through *oslæsund* 1 vs. From there to *ikernsund* (unidentified; an unknown name of the straits of the islands of Vitsgarn or Märsgarn?) 1 vs. From there to *gardø* (Gålö peninsula, once island) 1 vs. From there to *dalernsund* (Dalarö strait) 1 vs. From there to *harustik* (Harstäket passage = Baggensstäket, cf. the last element *stäk,* meaning blockage) 1 vs. (should be 3 vs).

From there to *litle swethiuthæ* (Lilla Sverige or Sveriges holme islet at the entrance of the Stockholm harbour basin) 1 vs. From there to *stokholm* (Stockholm) 1 vs.
Finally, on the Swedish side, from Sveriges holme islet to Arholma island at the Sea of Åland:

Section 10

And from *litle swethiuthæ* to *wiræsund* 1 vs. (*wiræsund* being the entrance strait of the Långhundraleden inner sailing route, once carrying far into the central parts of the province of Uppland. The mansions of Vathar / present Vada and Husa of Össebygarn parish are in AD 1274 told to be situated at *wiræsund* strait; cf. Ambrosiani 1964: 139, Gustavsson 1967: 16, Gräslund 1987 on the site of the battle at Helgeå in AD 1026: this place name must, however refer to the entrance at the present bay of Trälhavet at Åkersberga. The other, most improbable alternative, without any relevant place name, Tenösund or Vaxholm straits must be at least 2 vs. from the islet Sveriges holme, and from *wiræsund* 3 vs).

From there to *malægstagh* (not identified, the last element reminding of Stabo udde promontory, N Siarö/N Ljusterö islands, or of Stäket, S Helgö/N Vettershaga, which is more probable, obs the *stäk* element, referring to a sailing route blockage) 1 vs. (at any rate too short a distance, should be about 4 or 5 vs.?). From there to *krampe sund* (Nänninge sund strait, NL II map 33, now dry land, inside of Rådmansö, cf. Krampö sund strait, referred to as *stendor sund* in the above itinerary of Södermanland, *krampe sund* is anyway not found as a present place name in this area: possibly a mistake of the scribe?) 3 vs. (if earlier identifications are accepted this distance would be at least 6 vs.). From there to *weddesund* 1 vs. (*weddesund* seems to refer to Vätö sund[et] in a Danish form, in this case only marking the entrance, the route running henceforth directly to *arnholm*/Arholma. The improbable alternative would be that this item denotes a passage of the strait referred to which then undoubtedly would be the unrecorded strait Väddö sund, now dry, in the present bays of Långviken/Samnäsfjärden/Granö ström, NL II map 34, but then the distance is mistaken, which, however would be no wonder, since almost all the distances in this section are incorrect). From there to *arnholm* (Arholma island) 2 vs. (the distance ought to be at least double in any case). To observe is that the voyage from *utlengi* (Utlängan of the archipelago of Blekinge, where we started) to *arnholm* runs more to the north than to the east.

In this area, accordingly, the Norrlandsleden sailing route started (or finished).

The itinerary then crosses the Sea of Åland to the Gulf of Finland which is called the Sea of Estonia in this text:

Section 11
From *arnholm* traversing the Åland Sea to *lynæbøtæ* (Lemböte promontory) 6vs. (at least). Thereafter to *thiyckækarl* (Kökar island group) 8 vs. To observe is that between *thiyckækarl* and *linæbøtæ* lie many islands, which are called *fyghelde* (Föglö). From there to *aspæsund* (Aspö island strait) 6 vs. and in this area there are three islands, of which one is called *aspø* (Aspö), the second *refholm* (unidentified, perhaps a part of Björkö or Lökskär: Zilliacus 1989: 25), the third *malmø* (probably Nötö: Zilliacus op.cit.: 24f.) and *iurima* (Jurmo) is the last of these, in a southerly direction and closest to the sea. From *aspø* to *ørsund* (Kyrksundet strait between Örskär and Örö of Hitis and Rosala archipelagoes) 6 vs. Thereafter to *hangethe* (Hangö promontory) 3 vs. and it ought to be observed that you go from *arnholm* to *lynæbetæ* between east and north and if the wind is favourable from the west you can sail in a straight line from *arnholm* to *hangethe*, which is called *cuminpe* (Finn. Kuminpää, at present unknown) in Finnish to *lowicsund* (unknown: probably at Tvärminne) 2 vs. Further to *karienkaskæ* (Karrieser/Ellie/Älgö, Kerkkonen 1945: 162ff., cf. Granlund 1962 and Zilliacus op.cit.: 27, who proposes Hästö Busö) 1 vs. Further on to *iuxaræ* (Jussarö island) 2 vs. Further on to *horinsaræ* (unknown, possibly Orslandet island) which in Danish is called *hestø* (unknown) 2 vs. Further on to *purkal* (Porkkala peninsula) 3 vs. and to this island you go from *hangethe* (Hangö) eastward but also somewhat northward. Thereafter from *purkal(æ)* to *narigeth* (Nargö, present Naisaar island) across the Estonian Sea (Gulf of Finland) 6 vs. Further on to *karlsø* (Karlö, Kalön, Karön, present Paljasaar peninsula, west of Tallinn, Wieselgren 1951: 105). Further on to *ræuelburgh* (Reval = Tallinn) ¹/₂ vs.

And to observe is the fact that from *purkal* to *ræuelburgh* you ought to sail in a direction between south and east. Furthermore is it to be observed that – if you want to – you could sail from *hangethe* (Hangö) to *hothensholm* (Odensholm = Osmussaar) with a northerly wind towards south and east. And there the sea is 8 vs. wide.

Place names of the itinerary

name:	identification:	mentioned (times)
æfra	Ävrö, island	1
alæsnap	Älvsnabben, island basin (Månsson 1644)	1
alrecki	Arkö (sund), 1644 *Åreckian* (Månsson), strait	1
alør	Ålö (S Örsbaken), island	1
arnholm	Arholma, island	6
askø	Stora Askö, Tjust, Småland, island	3
askø	Stora (Lilla) Askö, Trosa, Södermanland, island	2
aspæ sund	Aspö sund (SE Åland), strait	1
aspæ	Aspö (SE Åland), island	2
æfra	above	
brawic	Bråviken, bay	4
brunsø	? brunskär (NW Möja), island	1

calmarne	= *kalmarne* (below), Kalmar, town	2
cuminpe	Hangö *(hangethe)* in Finn. (* Kuminpää)	1
dalernsund	Dalarö (sund), strait	1
diuræholtsnub	point after Djurhult, S Oskarshamn *(dyur)*	1(2)
dyur	abbreviated form of the above name	1(2)
ekiholm	Ekholmen, Järflotta, island	1
eldø	St. Jäll ön, N Runmarö, island	1
enkø	?Eknö, NE Runmarö, island	1
enlangi	Östra Lagnö, NW Husarö, island promontory	1
fifang	Fifång, Trosa, island	1
fimersund	Femöresund, N Bråviken bay, strait	1
	(*Femmershufvud*, Månsson 1644)	
finør	? cf. Fånö, Blidö (part of Blidö island)	1
fyghelde	Föglö, Åland, island group	1
gardø	Gålö, peninsula, former island	2
geishammer	? cf. Fittjöhammar, N Oskarshamn, promontory	1
(gershammer)	above, alternative reading, promontory	1
hærø	Harö, island	1
hærihammær	Herrhamra (Torö), promontory	1
hafø	? cf. Hänö, archipelago of Trosa, island	1
hambræ	? cf. Loftahammar, peninsula/promontory?	2
hangethe	Hangö, Finland, promontory (Månsson 1644)	4
harustik	Harstäket/Baggensstäket, strait (passage)	1
hestø	? Danish version of *horinsaræ*, below	1
horinsaræ	? Orslandet, Finland, island (cf. above)	1
hoxhals	Oxhalsö, island	1
hothensholm	Odensholm (Est. Osmussaar), Estonia, island	1
	(Månsson 1644)	
husarn	Husarö, island	1
hærø	as above, Harö, island	1
hærihammær	as above, Herrhamra, promontory, *Herhambra*/Öija 1644,	1
	(Månsson)	
ikernsund	? cf. Vitsgarn/Märsgarn islands, strait	1
iurima	Jurmo, Finland, island	1
iuxaræ	Jussarö, Finland, island	1
kalmarne	= *calmarne* (above), Kalmar, town, Småland	1
karienkaskæ	karrieser/Älgö, Finland, or Hästö Busö, islands	1
karlsø	former Karlsö (Est. Paljassaar), peninsula	1
klineskær	? cf. Klämna = *dyræholtsnub/dyur,* above	1
krampesund	? Nänninge sund, Rådmansö, strait	1
leckæ	Lacka, island	1
linter	? cf. Linken, part of Blidö?	1
litle swethiuthæ	Lilla Sverige, islet	2
lowicsund	? Tvärminne, Finland, strait?	1
linæbøtæ	Lemböte, Åland, promontory	1(2)
(lynæbetæ)	(as above, repeated with another form)	1(2)
mæthelsten	Mellsten (Mälsten), islet (Månsson 1644)	2
malægstagh	? Stäket, Staboudde (strait, point?)	1
malmø	? Nötö, island	1

mare aland	Sea of Åland	1
myghi	Möja, island	1
mæthelsten	above, Mellsten (Mälsten; Månsson 1644)	1
narigeth	Nargö (Est. Naissaar), island (Månsson 1644)	1
neffø	Nämdö, island	1
nutarn	Nåtarö, island	1
olæ	Ålö, island	1
ornæ	Ornö, island	1
oslæsund	Yxlö sund, Södermanland, strait	2
purkal	Porkkala, Finland, strait	3
quetnæ	Kvädö, island	1
ræfnes	Rävsnäs, N Kapellskär, promontory	1
ræfuelburgh	Reval (Tallinn), town	2
ræueskiær	Revskär, Trosa, island	1
refholm	? possibly Björkö or Lökholm, islands	1
rinzø	Ringsö, Södermanland, island (Månsson 1644)	1
rotæsund	Rotsund, Östergötland, strait	1
roxhammer	Uthammar (*rookhammarsudd* 1695, Giedda) promontory	1
rudmi	Runmarö, island	2
rugø	Rågö	3
runø	Runnö, island	1
ræuelburgh	above, Reval (Tallinn)	2
ræueskiær	above, Revskär	1
særsør	Särsö, island	1
sandø	? Södra Stavsudda/Sandhamn? (islands)	1
sicmar	Sikmarö, island	1
siuiæsund	Sävö sund (Sävsundet), strait (Månsson 1644)	1
skægge nes	Skäggenäs, promontory (Månsson 1644)	1
sporæ	Spårö (sund), strait/island (Månsson 1644)	1
stefsø	? S Stavsudda/Löka Stöfvelö?, island	1
stendor sund	Stendörren, strait	1
stokholm	Stockholm, town	2
strømsø	? Berghamn, island	1
swethersund	Svärdsösund, strait	1
særsør	above, Särsö island	1
thorø	Torö, island	1
thiyckækarl	Kökar (island group)	2
ulfsund	? Olsösund/Olssund? (strait)	1
uthøi	Utö, island	1
utlengi	Utlängan, Blekinge, island (Månsson 1644)	2
wæggi	Väggö, Östergötland, island	2
waldø	Vållö, Småland (Månsson 1644)	3
weddesund	Vätö sund (Väddö sund?), strait	1
widør	? cf. Sidö (Riddersholm, Rådmansö)	1
windø	Vindö, island	3
winterclasæ	Vinterklasen, Östergötland, islet (Månsson 1644)	1
winø	Vinö, island	2
wiræsund	extinct; Trälhavet (bay/strait)	1
wæggi	above: Väggö island	2

æfra	above: Ävrö island	1
ørsebac	Örsbaken, bay	1
ørsund	Örösund, Finland, strait	1
ørsund	? extinct: Bar[ö]sund, Östergötland?, strait	1
øslæ	Yxlan, Uppland, island	1

Number of place names in different countries:

Denmark	1 *(utlengi)*
Sweden	78
Finland	18
Estonia	4 *(narigeth, ræuelburgh, karlsø, hothensholm)*

The general background of the manuscript

According to the prevailing scholarly opinion the present manuscript was made by several scribes in a monastery, probably the Cistercian abbey of Sorø in Denmark (Kroman 1936a, b, Johansen 1933, KLNM: Valdemars jordebog). According to an analysis by a Swedish philologist its place name forms point to a date around AD 1300, maybe even a little later (Modéer 1937). The general impression of the writing, as well as of the binding, turns out in the same direction (KLNM: loc.cit.). Johansen's dating of the collection of the manuscripts to the years 1260–90 does neither fall short of the other datings. His hypothetical attribution of the Baltic itinerary to the bishop of Reval (Tallinn), Thorkild, a native of Ribe in Denmark (bishop of Reval in AD 1238, who died in 1260) is very doubtful. A feeble clue might, according to Johansen, be the possible (very conditional) knowledge of the Finnish language (or rather some Finnish place names) displayed in the text of the Baltic itinerary. Furthermore, the starting point of the Mediterranean counterpart is Ribe, the birth-place of Thorkild. Johansen wisely concludes: *Beweisen läßt es sich natürlich nicht* (1933: 162). Since the Ribe route description is much earlier, this latter argument is quite irrelevant.

However, the actual contents of the main body of the Liber Census Daniae date at the latest from the 1230's, according to conclusive evidence from the analyses of the Danish scholars (KLNM: loc.cit., and supplement). It is obvious that the whole Liber for some reason has been put together a considerable time after its immensely interesting material was of current use.

The Finnish medieval historian Jarl Gallén (made e.g. at the Bottnisk Kontakt conference in Skellefteå in 1988; Gallén 1990 in print and fortcoming), has recently asserted, that the calendary part of the Liber Census Daniae, including the itineraries, has got a Franciscan background. One of the reasons is that the patron saints of the Franciscan order, St. Francis and St. Anthony of Padua, are invoked in the text. This circumstance has, however, already been discovered by e.g. Johansen (1933: 149). For this reason the itinerary of current interest may therefore, according to Gallén, reflect the expansion of this order along the waterways right up to Estonia. Gallén suggests that it might be possible that the enumerated place names rather indicate seasonal fishing sites where Franciscans could preach for food, lodging and gifts during the fishing season, rather than a regular itinerary for a shipping route. He apparently expects a particular interest of the itinerary text in the archipelago areas where the Franciscans were given rights of possession and of certain natural resources (lime, firewood etc.). The first area is supposed to be section 6–7(8), where we find the islands donated by the Swedish king Magnus Ladulås to the convent of S:a Clara in Stockholm in 1288–89: Runmarö *(rudmi)*, Sandö (Sandhamn; if *sandø* of the itinerary) and Husarö *(husarn)*. The second area is the island

group of Kökar *(thiyckækarl)*, SE of Åland with the islands of Aspö *(aspæ sund)* and Jurmo *(iurima)* in the east (Gallén 1990: 31, 32).

The convent of Kökar, however, was not established before the middle of the 15th century (Gallén op.cit.: 33). This must of course not exclude an earlier Franciscan interest, but it remains unproven by the current arguments. Besides, the original itinerary most probably is of an earlier dating than even the 1280's. Moreover, in no way this particular interest is shown by the text of the itinerary, if not in the confused section with unusually dense place names, which partly are unidentified, including *sandø,* which is referred to above (section 6–7). The two other island names, *rudmi* and *husarn* are in fact found in other sections, if we follow the divisions proposed. However, this rather improbable theory on the general character of the whole calendar part does not change the fundamental character of the itinerary as a sailing route sequence.

Moreover, Cederlund (1989a, b, 1990) has recently shown from the evidence of the ancient monuments survey of Sweden, that although several mentioned sites may be seasonal fishing harbours, this is by no means a consistent occurence. On the other hand, few of these remains are dated. To prove Cederlund's assertion that there are neither any reasons to surmise harbours, anchorages or havens (as earlier maintained by the present author, Westerdahl 1978, 1984 on place names and oral tradition on traditional usage) at the sites certainly requires more studies (including underwater surveys) than is possible during a moderate time of leisure sailing along the route. Maybe even the ancient monuments survey would not suffice on land, but only concentrated efforts in well-chosen localities.

Moreover, there are – as we have already seen – t w o itineraries in the Liber Census, of which one, i.e. the Mediterranean, certainly is inserted, apparently from other records, in the text, since we know of its existence since the later part of the 11th century (ref. as of above, introduction). If this also is the case with the Baltic version any reference of the Gallén kind would be irrelevant.

Except in the terms of this context we know next to nothing on the background of the Baltic itinerary. It is highly improbable that the Sorø (if this is the place) scribes copied these and other texts, as has been proposed earlier, for the purpose of an exercise in writing, since the scribes seem to have been fully educated (KLNM: loc.cit.). Nor is it very probable that the content to some extent was meant for and/or actually has been in the use of the Danish royal family as a kind of educational material for the young crown prince (as mentioned by Johansen 1933).

The history of the manuscripts is fairly complicated. The Mediterranean itinerary belongs to another hand (called C) than the Baltic one (D), the former copyist having written by far most of the two. The fate of the manuscripts after the Middle Ages is hazy. However, Kroman states that the uniform character of the sheets and their size shows that they were meant as a unity already at their conception. They were found and collected, and at least to some extent rearranged by a Swedish scholar in the 17th century (Jacobowsky 1932, 47f.) and remained in official Swedish ownership until the 1920's, when an exchange was arranged with the National Archives (Rigsarkivet) of Copenhagen.

The significance of this short summary on views expressed on the background of the itinerary text is thus intended to drawing our attention to the fact that we have no right to found any definite opinions on its feeble basis. This concerns the generalization of its contents, as well as referring to its possibly unique and temporary character. The only information possible to extract must be found in the text itself, on which to found further considerations.

Fig. 5   *Place names of the itinerary in their medieval forms. The underlined names have not been identified or are presently unknown. For the eastern part (Finland and Estonia) cf. fig. 15.*

Discussion on the itinerary

As can thus be easily discerned in the text, nothing is explicitly mentioned on ports, nothing at all on the possible attractions of the coastline run along, nothing except place names, some distances and general courses to be inferred from the sequence enumerated. It appears as if the only interest of the text (or the scribe) would have been the transport from *utlengi* to *ræuelburgh*.

The verbal description of this route accordingly comes out, simply expressed, as a sequence of places reached and/or sighted along the passage. Only one site, that of *dalern sund* (present Dalarö, at the southern entrance to the Stockholm area from the south) seems to be explicitly mentioned as a port in other medieval records. Later, however, Dalarö is one of the most important out-harbours of Stockholm, as well as a customs and pilot station.

There are a few relevant sources giving individual names of points along the Swedish east coast. Some are found in rhymed chronicles, such as Erikskrönikan ("The Eric chronicle", c. AD 1335, on the life and times of prince Eric Magnusson, AD 1318) and Karlskrönikan ("The Karl chronicle", on the correspondingly troubled times of King Karl Knutsson Bonde of Sweden, 1408–70 (king in different periods, 1448–57, 1464–65, 1467–70), being written around AD 1452, abbreviated KK. In the latter are mentioned e.g. the harbours of *cura hampn* (present Kårehamn? KK 6604) on the east coast of the island of Öland in the south, i.e. facing the open sea, as opposed to the Liber Census itinerary, and finally *dalerna* (Dalarö, above; KK 1762).

On the other hand, there are quite a number of port sites in other waters than those of the east coast. The meeting place of *iuncfruhafn* (in present form Jungfruhamn, "Harbour of the Virgin" or maybe just "Virgin Harbour"?) is mentioned in KK strophe 1765, probably referring to a particular site, pointed out by Schück (1958) in lake Mälaren, but in fact at least 3 "Jungfruhamn" sites exist at the present time in this lake (Westerdahl 1989: 181f.).

The single site of *dalern sund* may, in the light of other experiences, be said to represent the character of some of the other sites mentioned. The place name element *sund*, appearing in quite a number of sites, means "strait". It can moreover be shown that some other sites mentioned, although not explicitly referred to as straits, topographically constitute important passages in straits, some at the same time traditional havens or port sites, well known in later times. Before turning to the general character of the sites mentioned, however, we have to treat the distance measure of the itinerary.

The Nordic maritime measure of length, vika or vikusjö

One of the characteristics of the itinerary of the Baltic is that certain, well-defined parts of it are supplied with a particular Nordic unit of measure, *vika* or *vikusjö* (Dan. *ugesøs*). The Mediterranean journey is on the contrary counted in days and nights (just like Óttar and Wulfstan in the Viking Age). The Danish scholar N E Nørlund (1944) has measured all 43 distances of the itinerary and found an average for the *vika* or *vikusjö* used as of 8.3 kms with a margin of ± 0.22 km. The unnamed author of an article in "Rospiggen" 1970 gives some examples of comparisons between his own assumed standard figure for the vika of 4' (c. 7.4 kms) and the measurements of the itinerary. There are clear problems. The 10 *vikusjöar* (henceforth abbreviated vs.) of the itinerary between *utlengi* and *calmarne* would rather correspond to 11^{1}/$_{8}$ vs. and the stretch *skæggenes–waldø,* given as 4 vs., rather seems to approach 5 vs. This gives good support for Nørlund's calculations with a longer *vika* of 8.3 kms. Furthermore, Nørlund has pointed out that the sea mile (Swed. *sjömil*) of 7.4 kms, or somewhat less, was introduced

during the later part of the 15th and the beginning of the 16th century, corresponded to the German (and geographical) mile of 7.420 ms (4'). The older *vika* has obviously been confused with this *mil* by Härlin (1942) and by the author of the Rospiggen article on early pilotage (1970). Probably this is anyway the measure of *weeke sees* of "Das Seebuch" (Koppmann 1876). Even if Nørlund refers to a Danish context there is good reason to believe that it also applies to Sweden at this time (KLNM: *uge søs*; cf. the calculation of Adolf Schück in 1933, mentioned below in connection with the land *rast*).

The Norwegian *vika* changes in the same way, although the designation remains. During the 17th century the *vika* could be estimated as 9.25–14.8 kms with an average of 13.3 kms. Roald Morcken (1970, 1978) has, however, been able to sketch an older *vika* of 6' = 11.1 kms.

In medieval Iceland, almost exclusively applying distance measures of the open sea, a *tylft sjávar* corresponded to 12 (a *tylft*) *vikor*, approximately one latitude, with a *vika* of 9.25 kms (cf Norway above). Two *tylfter* is originally a passage of one day and one night (Schnall 1975: 134ff.), but already in this context it has, according to Morcken, become a fixed unit of measure. The average length of the Norse *vika* seems to match the Danish one of 8.3 kms. The younger *vika*, on the contrary, is 10.4 kms.

In Finland the *vika* during the 16th century appears to be very short, in this case according to the context. This *vika* is thus mainly applied to inner routes. Kustaa Vilkuna (KLNM) has, on statements of Jacob Teitt of AD 1555, found that it changed with the degree of difficulty of the rivers from 4.4–4.5 kms upstream, the rapid Kajana river even supplying a *vika* of 3.6 kms. Imagination assumes an aim of e.g. 1000 (rowing) strokes or something similar. Downstream, however, the Finnish *vika* may attain 6 kms. To compare with this, Ernvik (1955), has calculated a *vika* of 5.3 kms in a lake of Värmland, west Sweden. In the open sea the Finnish *vika* during the 16th century corresponded neatly to a land *mil*, i.e. c. 6 kms. There is no proof of an earlier *vika* measure, but it is highly probable that such a *vika* has existed.

The same variations distinguish the corresponding units of land measure. The Östgöta law book of the early 14th century (Schlyter 1830: Drapa B. XI: p. 67, Holmbäck/Wessén 1933: 60) equalizes *vika at vatne* (in the water) with *rost at lande* (on land). A *rast* is the standard distance covered without rest. In the same way it has been assumed that one *vika* is the average distance that could be rowed without relief/change of rowers. At the end of the *vika*, the old team *vek (sig)* "made way" for a new (relief) one. Plenty of rather recent place names in Swedish oral tradition still attest to this practice in rowing routes: *Ombyteshällan, Skiftesgrundet, Bytet*, etc., all meaning *Change (Relief) Rock* or *Reef*.

Adolf Schück states (1933) that the Swedish land *rast* would comprise c. 9 kms, the maritime *vika* c. 8 kms. This agrees well with the Danish *vika* measure as of Nørlund above.

Moreover, as well as there have existed several types of functional *raster* there might have been many different *vikor*. The *styltingx rast* ("cripple[d] or cripple's rast") of the Hälsinge law book (Schlyter 1844 Wid XV: 78) is somewhat shorter than a regular land *rast*. When crossing difficult terrain (or in rivers upstream and possibly shallow waters?) the measure normally becomes shorter, e.g. shown by other concepts, such as *fjällmil* ("mountain mil") or *skogsmil* ("forest mil"). Ernvik digresses illuminatingly on this subject (1955).

It is easy to get the anachronistic view that the *vika* or the *rast* only was a functional and thus conditional unit of measure varying with the circumstances. Such may have been the case on particular stretches and terrains, but then always consistently. It is probable, however, that both standards generally were well-defined and rather precise. Morcken states convincingly that Norse degree measuring was well developed during the Middle Ages, possibly even working as an innovator in southern parts (Morcken 1978). Half a Norse *vika*, 3', i.e. 5.6 kms, was, according to Morcken, taken over by southern sailors, as the Italian *lega*, the French *lieu* and the English *league*.

For the existence of a fixed distance measure could appear to exist military or, rather, strategic reason. If the maritime *vika*, as assumed, mainly is derived from rowing, it may have had some original relationship to the organization of the levy fleet (Swed. *ledung*) system of the north, either for the constant supervision of the seaways by individual ships, or to provide an estimable length of time for the final rallying of the entire fleet (or squadron) unto a common thrust against the enemy (cf. Morcken 1978: 57). The universal acceptance of this unit of measure may presuppose a crown interest.

In Sweden, Schück has stated the case of an original *ledung* (levy fleet) for guard and surveillance of the seaways (*[far]led* = "sailing route" as the fundamental element of the concept - *ledung*: Schück 1950) rather than a primary attack fleet.

It would thus not be altogether surprising if there are fundamental crown interests and organizing powers at work in the sailing route. In fact it would perhaps be possible to find remains of a system in the route. Roald Morcken found such a system along the coast of Norway (1970: 27):

The route here so often changes direction that it has not been possible to sail. This has exclusively been a route for rowing vessels, and it may be regarded in connection with the rowing traffic, which, apart from sailing ship traffic, seems to have been characteristic for the Norwegian coast from the earliest times. It can be noted that the route only passes a couple of hundred meters outside of the islands. From then on the route goes inside and henceforth in such narrow waters that it was not suitable for other than rowing craft. Possibly from the Middle Ages may have existed stage points and inns (taverner) for every old mil *(Old Norse* vika*), which was approximately 6 nautical miles long. The division of the entire Norwegian coast into* vikur *probably dates back to a period before the Viking Age* (translation by the present author).

As we can see from the itinerary the distance between the enumerated points very often (although not always) amounts to one *vika (vikusjö)*, and furthermore, that the distances, if stated at all, are measured in units of the *vika*. This could of course just mean that the (assumingly Danish) sailor(s) or pilot(s) measured the sailing routes of the Swedish and Finnish coasts just as he was used to do back home. However, there is a good case for a local background (below on pilotage stretches). If there was an easily identifiable island at the end of a *vika* he attached the name of this island to the sequence, if not he just went on to another characteristic promontory or island profile on the route, sometimes measuring the distance in *vikusjöar*.

But the obvious connections of this sailing route to the military occupation, colonization and supply of the Estonian coast (AD 1219 and henceforth) makes for an assessment of another possibility, that of a military function of the *vika* in terms of the passage of a rowing fleet. However, this may require an intimate relationship between Danish and indigenous Swedish/Finnish interests, something that is hard to imagine. An eventuality would be the current colonization of Swedes in Estonia, possibly also papal instruction for the purpose of unity.

But there are indeed other simple and practical functions of the *vika*. The need for an anchorage or a rest did certainly not arise for every *vika* covered. Under sail in favourable winds this would be quite unnecessary, likewise in rowing, if you had recourse to a sufficient relief team.

The navigator, however, had a demand for elementary time and distance measures, e.g. in a memorized itinerary. He needed discernible bases in nature not to get lost. His use of the place names was certainly a contribution to this end. It would appear particularly valuable if he could discover the next sighting point on the route, whilst not having completely lost sight of the previous one. In clear weather a person at the height of one meter above the waterline can discern a low skerry at a distance of about 2′. Taller islands and skerries would be discernible

Fig. 6 *Stage points during the 17th century in Norrland. The southern localities of the 1620's in Häl-*
singland according to Hedin (1939), the sites along the Ångermanälven river and estuary in the 1660's
according to Friberg (1951). Observe the even distances between the stage points of the Hälsingland
coast, corresponding to c. 32 kms or 17' (4 vikur) cf. fig. 7.

earlier. The sighting distance is moreover increased if you are raised to the top (mast) level. If the navigator thus would be in need of a measure that works well even in a little worse sighting conditions, the Swedish/Danish *vika (vikusjö)* of 4' may therefore supply a natural distance between points or localities to be remembered. This accordingly means that half-way between two localities within this distance from each other the navigator would be able to see both the locality left and the next one. The time that he will have to wait for this favourable position, if keeping the correct direction, is not unduly long.

The Norwegian coast (or the Icelandic one) is mountainous, offering plenty of characteristical topographical features to an experienced navigator. Taking into consideration what has been said above on the height of the eye and the object above water it could be expected a somewhat longer distance measure in the Atlantic than in the Baltic (Denmark, Sweden). We have already established that this is the case.

As for a time measure, the *vika* may have been based on a not unreasonable rowing speed of e.g. 3 knots, which would give a pull of 1½ hours for a *vika* of 8.3 kms (4'), about two hours for a *vika* of c. 11 kms (6'). Nothing is, however, known of any concept covering these amounts of time.

Nature permitting, the early medieval mariner may thus have chosen suitable sighting points at a mutual distance of c. 1 *vika* for several concurrent reasons.

The unit of the *vika (vikusjö)* seems to have been applied in the stage point system for rowing transport of men and of goods for the crown (e.g. taxes *in natura*) in early historical times. In Norrland this system can fragmentarily be studied in the 17th century by way of Hedin 1939 (in the province of Hälsingland) and Friberg 1951 (I: 314f.; Ångermanland, more particularly in the river valley of Ångermanälven). It may be that this appears just as faded remnants of a former system of medieval (or even earlier) dating, such as is normally the case in this survival area, especially obvious in the field of transportation (cf. e.g. Fjellström 1978).

The distances between these stage points are about equal and constitute c. 32 kms, i.e. 4 *vikur* (17'). In Hälsingland of the 1620's this concerns the distances between *Granön* (Skog parish, at the border to the province of Gästrikland in the south), *Olsvik* (Norrala parish, outside of Söderhamn), *Mössön* of Njutånger parish, *Bergön* of Rogsta parish (the standard distance is kept, provided that the portage passage of Arnön is used) and *Haddhamn* of the parish of Gnarp in the north (fig. 6 lower part). It could easily but hypothetically be extended into the province of Medelpad in the north by way of the other most important of the medieval centres of maritime culture. The same applies to the provinces in the south.

In the transport system of the crown in the 1660's within the waters of the Ångermanälven river and fiord mouth the distance between the staging points (often documented as inn and ferry sites in later times) is mainly 2 vs. which may have something to do with rowing against the current, if the *vika* here would be assumed to represent a river measure. Upstream, on the other hand, we find an approximate standard of c. 3 vs. (22 kms) in the distance between Djupö and Boteå (fig. 6 upper part). It then appears a little illogical just to attribute this longer distance to the current carrying the rowers downstream. Perhaps the simple explanation lies in the different conditions along the coastline and in the sheltered waters of a comparatively densely settled river valley. Since the stage points in the coastal area – as of Hälsingland in the 1620's – explicitly are fishing harbours, there might be a good reason for a de facto pilot attendance at precisely those sites where stage boats were available. And it should neither be forgotten in this context, that some of these fishing harbours are situated outside of inlets with a particular strategic importance, as attested by sailing route blockages, beacon sites, fortifications and in a few cases *Snäck*-names (indicating the once presence of *ledung* levy ship[s]): Olsvik with *Stäckfjärden* bay, Bergön with *Stegsundet* strait, the *Stä(c)k*- or *Steg*-element denoting an underwater blockage, Mössön opposite *Snäckmor* bay. If not assumed to be just a
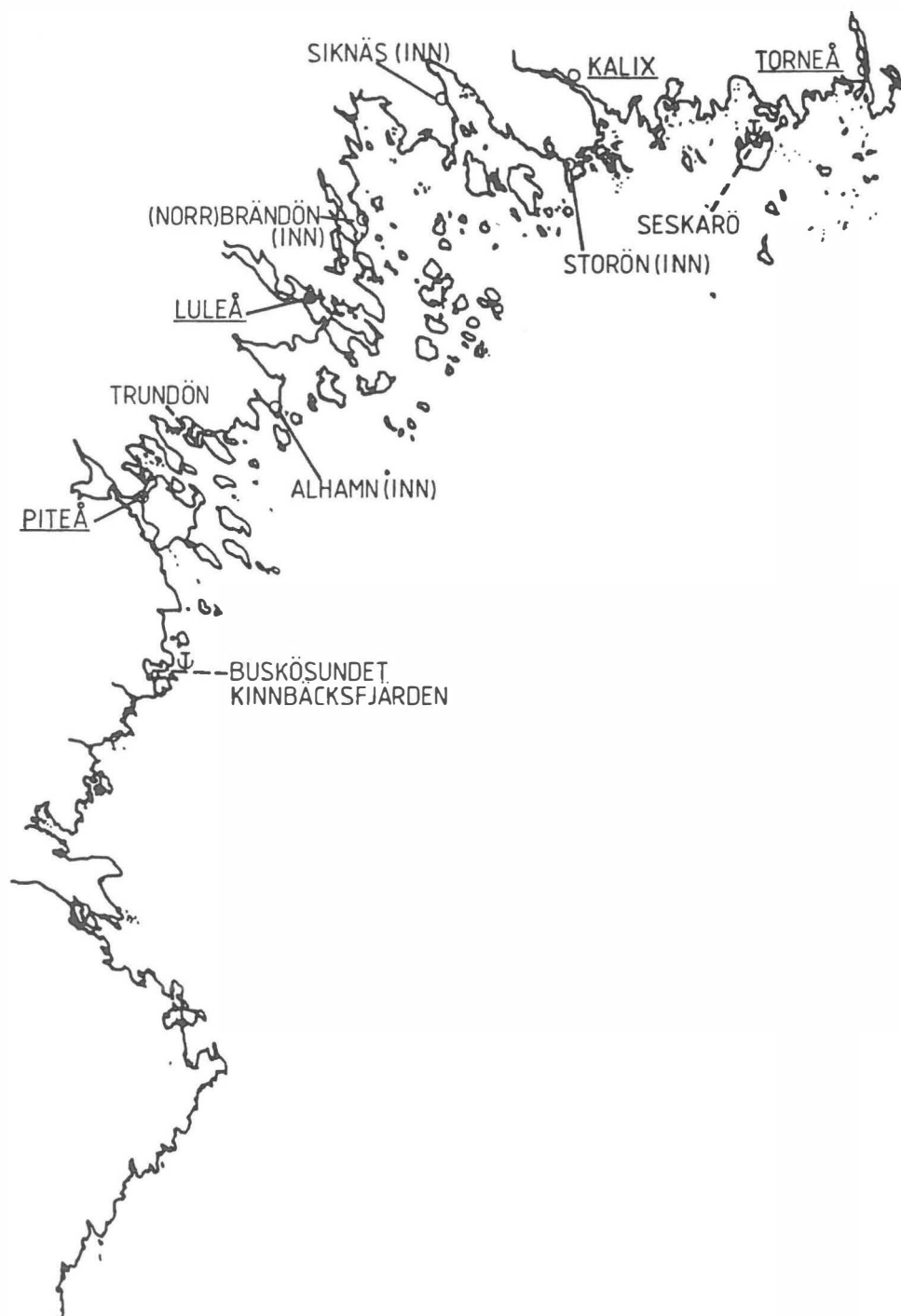
Fig. 7 *Inn sites of the Norrbotten coast in the 1680's, mostly according to Hoppe 1945. The distances correspond to those in fig. 6.*

local feature of the province of Hälsingland, which is most improbable, this may point to simi-
lar arrangements along other, more densely populated and central parts of the Swedish east
coast during the Middle Ages, e.g. at the itinerary route (cf. Schück 1950a, b). In the extreme
north the same system may be reflected in the distances between sites of local maritime inns
(Swed. *sjökrogar*). In Norrbotten this can be documented in the 1680's (Hoppe 1945: 91). The
current sites are *Piteå* (town), *Trundön* (hypothetical), *Alhamn* (inn), *Luleå* (town), *Norr-
brändön* (inn), *Siknäs* (inn), *Storön* (inn), *Seskarö* (hypothetical) and *Torneå* (town), all with
approximately equal distances to the next site (cf. fig. 7).

Standards of *vika* measures have also been proposed in the discussion on pilotage distances
below.

Problems of identification and distances

There are several plausible reasons for the variations of distances between the enumerated sites
of the itinerary. The longest single stretch, between *utlengi* (Utlängan of Blekinge) and *cal-
marne* (Kalmar of Småland) has got no archipelago, and very few difficult passages to be nego-
tiated. Moreover, few obvious sighting points are to be found on this shallow coastline. Since
it offers little shelter it ought to be passed as soon as possible. The following promontory after
Kalmar, *skægge nes* (Skäggenäs) is such an important landmark that it can never be omitted in
an itinerary of this coast, especially since there was an early passage for small craft inside the
promontory (*Draget*, indicating a portage, later a canal dug in the 16th century).

On the other hand, it is quite a surprise not to find any mention of the famous rock of *Blå
Jungfrun* (Swedish Virgin), the equivalent of Blocksberg in the Harz mountains. We will re-
turn to this remarkable fact a little later. If this omission only concerned Blå Jungfrun we
could even assume a magic reason. This is, however, not the case. Between *waldø* (Vållö) and
winø (Vinö) there is recorded a distance of just 1 vs. between no less than seven points, i.e. to-
gether 7 vs. (56–60 kms). This is only natural in such a rich and varied archipelago, where ma-
neuvering in the route is fairly laborious. But it is still rather puzzling that the continuous ar-
chipelago northward does not supply such dense sites. Four localities from *hambræ* (Hall-
mare, Loftahammar) to *quetnæ* (Kvädö) display 1 vs. as distance measure. The following six
points up to *alrecki* (Arkö) are rather irregularly chosen, although the distances are approxi-
mately the same as the preceding ones. The distances between the points are only given contin-
uously from *utlengi* (Utlängan) to *winterclasæ* (Vinterklasen) of Bråviken bay. With a *vika* of
8.3 kms this means 48 × 8.3 kms, i.e. c. 400 kms. The remainder of the itinerary sequences of
the Liber Census only delivers sporadic distance measurements, at least partly explained by
the separate route parts put together in the manuscript.

The densest occurrence of place names is found in the Stockholm archipelago, where several
sailing routes are indicated, not only the continuing route but also an extensive detour to
Stockholm. The most irregular system of enumerated points, in the over-all light of the itiner-
ary, seems to be found in Finland, where the distances are great and where few measurements
are given. However, some identifications may still appear enigmatic.

The itinerary or sailing description is enumerating a sequence of place names of the inner
route. There is a conspicuous absence of relationship to the mainland. Most place names of the
itinerary are, as can be discerned from the translation, easily identifiable, which is rather sur-
prising, considering the more than 700 years elapsed. The important work of site identifica-
tion was already made, as has been pointed out above, by Axel Härlin (1936, 1942) for the
Swedish part. The place names at the Finnish coastline had mostly been found already at that
time (Jaakkola 1933). Only a few additions and minor corrections have been achieved since

then (Kerkkonen 1945, Granlund 1962, Westerdahl 1978, 1979, 1984, Ericsson 1984, Zilliacus 1989). Most unanswered questions remain relatively unimportant in this context.

There may still be topographical or other reasons slightly to change the order of the sequences or the distances mentioned. Sometimes, however, there is not a trace of place names even faintly similar to or related to those of the itinerary in the suspected locality, even if one believes in the approximate distances given.

Concerning the place name *krampe sund* (literally "the twisted strait") which Härlin wisely interprets and logically places at the present Nänninge sund (or Nänninge ström) inside Rådmansö (parish and once island, fig. 1) some comments are justifiable as examples of possible ways of thinking. The present author does not, however, doubt Härlin's sequence of the route in this area. This part is furthermore included in my survey (Westerdahl 1987: map 35), which definitely establishes the existence of a former inner sailing route here. But there is no such place name as *krampe sund* or even remains of it. On the other hand there is in fact another important passage mentioned long before this part in the itinerary, *stendor sund*, a strait inside the island of Krampö, situated c. 20 kms east of the present town of Nyköping, Södermanland. This passage has got its name from the gatelike sighting point *Stendörren* obviously ("The Stone Door"), which is also mentioned by Olaus Magnus in 1555 (Lat. *Steendor*). As the present author has pointed out elsewhere (e.g. Westerdahl 1984, 1989 I: 190; cf. Stahre 1975), the place name *Stendörren* obviously is a migrant name along this coastal sailing route. Another instance of the name, which is conventionally assumed to be referred to by Olaus Magnus (e.g. by Granlund in his commentary to Olaus Magnus in Swedish 1951, new edition 1976 I:347) is found northeast of *dalern sund* (Dalarö, S Stockholm). A third occurrence was found in oral tradition by the present author and as *Standorrskier*, e.g. on a map from 1732 in the same itinerary route sequence as above, between the points of *wiræsund* and *malægstagh*, of which only the former safely can be identified (Westerdahl 1979: 23). Immediately to the east of this place name on the aforementioned map of the 18th century it is still possible to read the southernmost mention of *"Nörrlandz leden"* (the Norrland sailing route).

If, let us say, the copyist of this manuscript might have found two place names at the same point, e.g. *stendor sund* and *krampe sund* (i.e. Krampö sund, as above) he may have transferred the latter to its present place assuming that there was no place name to be found there, or maybe an unreadable name. After all, there was in the first instance (in 18th century form *Standorrskierr*) an identical place name on which to found the sequence at this spot. It is also possible that this name appeared in a scholion entrance in the original manuscript, but with unclear reference to its place in the sequence. *Krampö sund* is anyway not unknown to this day as an alternative name of the passage west of the southernmost *Stendörren*. The present author would still avoid trying his readership's patience on this detail if it could not be established that all distance measurements in this route part of the north Stockholm archipelago are incorrect, reflecting at least some kind of disruption or, as has been stated below, a separate entity. Besides, such a discovery carries certain obvious implications for the whole of the itinerary.

Moreover, the form *øslæsund,* identified with the strait inside the island Yxlan, in the southern part of the Stockholm archipelago (as a hypothetical present *Yx*[e]*lösund* could possibly instead refer to Oxlösund, at the present site of the town of Oxelösund, in the itinerary approximately *fimersund* (present Femöresund). This site is known as a good harbour, mentioned e.g. by Johan Månsson in 1644. The island *øslæ* is, by the way, also another site mentioned by the itinerary text, but situated in the north part of the Stockholm archipelago, in the very part that we treated above in connection with *krampe sund*. The passage here is in fact also in traditional usage referred to as a strait *(sund)*. Would it be possible, thus, that the route sequence precisely here displays a consistent disruption?

This, anyway, approaches mere speculation, but it certainly must be pointed out, this dis-
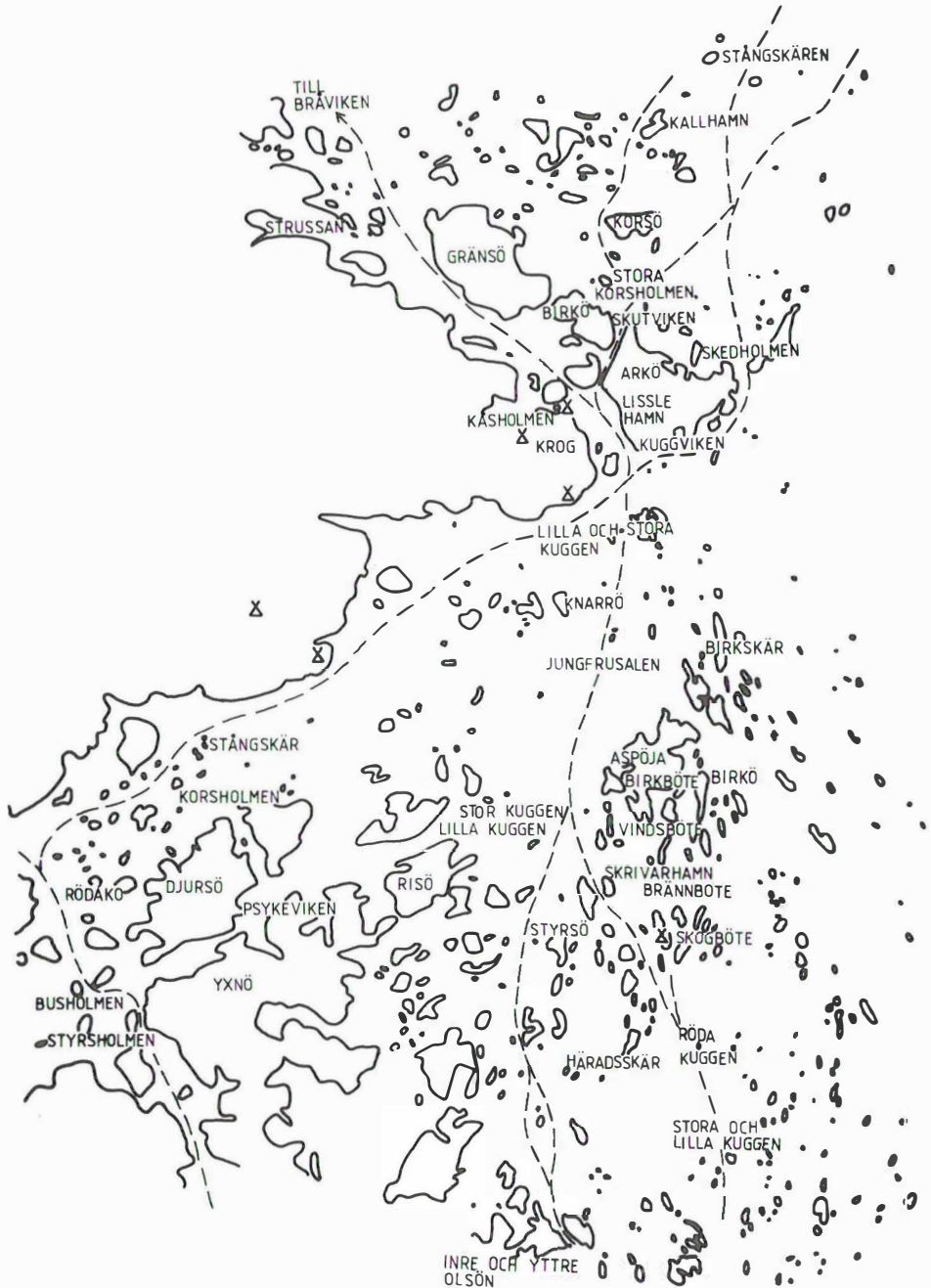
Fig. 8 *Sketch of the area of the itinerary points* alrecki *(present Arkösund) and* ulfsund *(present ●lsösundet) in Östergötland. Note the prolific* Kugg- *and* Knarr- *names presumably marking the medieval sailing routes.*

ruption being a fact, that there is a distinct possibility that other unidentified place names, such as *malægstagh* and *ikernsund* could be found at any place of the route, not unreasonably assuming that the order of the sequence also in other parts may have been disrupted in some way. This possible process of disturbance, which is otherwise not at all apparent, is at least not quite improbable considering the fact that, as will be further developed below, several disparate route parts have been put together in the text without any obvious feeling of division on the part of the copyist or scribe, although it may have existed at the original time of conception. It would also seem probable for the reason that some important localities for navigation (sighting points, harbour areas, even towns) have been omitted altogether in the itinerary. Some of these omitted sites have been mentioned elsewhere, e.g. the islands of Blå Jungfrun and Furön of the Småland coastline. Disruption could also possibly have been caused by sites in former manuscripts which were nameless or unreadable although perhaps supplied with a loose statement of distances. If there ever was such a remarkable maritime metric system as I have tentatively guessed (e.g. Westerdahl 1978, and above) these missing localities could be identified by laying out experimental standard measures, such as suitable units of the commonly used *vikusjö (vika)*, preferably in groups of four *vikur* (32 kms) which appears as the reasonable maximum distance between transit or stage points of Norrland (cf. fig. 6). This presupposes a harbour function of the proposed area.

Several towns or preurban settlements/market sites must be passed over simply by lack of relevance. The only exceptions are Kalmar, Stockholm and Reval (Tallinn), which actually are situated directly on the route. The sequence otherwise shows a thorough-going long-distance route along the coast. Only some possible out-harbours or contact points for market sites, some of them later towns, may be included: From *sporæ*, present-day *Spårö (sund)* strait, the town sites of Gamleby (first mention of Västervik in AD 1275) with its successor Västervik (AD 1433) would be reached, from *quetnæ* (Kvädö) the village of Valdemarsvik (in 1644 loading site for the town of Söderköping), from *wæggi* (Väggö) the castle site of Stegeborg (end of the 12th century?) and the town of Söderköping (11th century), from *alrecki* (Arkö) the town of Norrköping (AD 1284), from *fimersund* (Femöresund), *alør* (Alö) at the *örsebac* (Örsbaken) bay or from *rugø* (Rågö) the town of Nyköping (12th–13th century), from *hafø* (present Hänö?), *askø* (Askö) or *fifang* (Fifång), the towns of Trosa (1314) or Tälje (Södertälje; probably 11th century). There is, however, no indication of any particular importance attached to these localities in the itinerary, nor in any comparable source, except in later times. The sailing route thus even here takes into no account the different sites at the mainland, even if maritime in character, except as sighted points (e.g. promontories). And there is no relationship between the possible entrances to medieval towns or markets and the intersections between route parts which will be discussed below in the chapter on the significance of the Liber Census Baltic itinerary.

The distance of two *vikusjöar* (8′) between *sporæ* (Spårö) and *hambræ* (Hallmare) is not correct. Today it would be 10′. But as Janhem (1968: 23) states, there is a distinct possibility that the presently too shallow sailing route between the islands of Hasselö and Sladö was supposed to be used. In this area there occurs a haven site with the interesting name *Knar[r]hamnen* ("harbour of the Knarr", referring to a Viking Age cargo ship type). This straight route would thereby have saved the detour by way of Sladö island to posterity.

Other deviations of distance measurements have been included in the translation. It appears that sometimes alternative routes have been used inside of the archipelagoes. In the case of Askö and Väggö they can be supported by traditional usage and possibly by medieval ship finds. Another instance would be the straits of *ulfsund* (Olsösundet/Olssund) and *rotæsund* (Rotsundet). At the inner route are found two islands called *Stora Kuggen* and *Lilla Kuggen* and further inland the island *Knarrö*, both seemingly indicating ship types of the Middle Ages

Fig. 9   *The area of the itinerary points* waldø *(Vállö) and* runø *(Runnö) of Småland (Påskallavik area). Note the place name elements* Kugg-, Snäck-, Knarr- *and* Buss-. *This is the only area where all these four ship type names can be found in such a concentrated space along the east coast of Sweden.*

(*Kugg-* the "cog", *Knarr-* the Viking Age "knarr"). In the outer route, marked even today, occur three other *Kugg*-sites: *Stora Kuggen* and *Lilla Kuggen* once more and *Röda Kuggen.* At the confluence of these two routes at Arkö *(alrecki)* appear still other *Knarr-* and *Kugg*-names. Altogether this area constitutes one of the most obvious concentrations of this kind in Sweden (fig. 8). Elsewhere I have indicated a similar concentration of all the older ship type place names on the mainland (*Kugg-, Snäck-, Knarr-* and *Buss-*) at Påskallavik, Småland (itinerary: *runø/waldø,* fig. 9, cf. the discussion on the expression *si placet ire per latus terre* below).

As an example of carelessness on the part of the scribe or possibly as another sign of separate route parts must be pointed out the distance measurement between *dyur (diuræholtsnub)* and *winø.* It is recorded as 3 vs. Only just before this statement it is possible to add up: *from there (dyur) to geishammer 1 vs. From there to roxhammer 1 vs. From there to æfra 1 vs. From there to winø 1 vs* ... Thereby it is possible to obtain the still correct measurement of four vikusjöar.

There are a couple of other problems to exemplify the manners of thinking applicable. For example, the unnecessary density of places names (islands) between *rudmi* (Runmarö) and *myghi* (Möja) in the Stockholm archipelago, of which most are unidentified: *strømsø, eldø, sandø, brunsø, enkø, hærø, stefsø*, must have a particular reason. The natural, wide and sheltered route could here simply be described by naming *rudmi* and *myghi*, with the normal distance measure. The present author has got no plausible explanation to present, except the existence of a separate route part. This is obviously where Gallén (1990: 31, 32) has got his argument on the Franciscan interest (above).

When delineating a route *rugø – rinzø – leckæ – askø – ræueskiær – hærihammær* (Södermanland), where all localities are safely identified, the general character appears to be of an outer route. Would the itinerary navigators then be passing between present Ringsö and Lacka islands since Hartsö is not mentioned? Or would it rather mean that the Sävösund strait passage *(siniæsund)* in the inner route was chosen? The latter passage is thus mentioned in the other (later) sequence, where *rinzø* is not mentioned, but immediately before *stendor sund* is. This is perfectly possible, but in this case I also think we may be sure of a separate route part.

A last problem accounted for here concerns the identification of a certain locality in Finland (Nyland). From *hangethe* (Hangö)/*lowicsund*, after which *karienkaskæ* has been identified as an island (Kerkkonen 1945: 162ff., cf. Zilliacus 1989: 27) at the entrance of a later much-used inner route (Barösundsleden) appears *iuxaræ*. This is, however, clearly Jussarö, a parallel outer island. Between this site and *purkal* (Porkkala) then lies *horinsaræ* (Dan. *hestø*). This could be *Orslandet* at Barösund, which would indicate the inner route once more, but it could also point to a collective name for the whole island group inside the outer skerries or a now extinct place name. In spite of the general character of the preceding coastal route on the Swedish side and in spite of the fact that there is an excellent inner route at the spot, we are forced to accept the outer route alternative at this junction. This is probable also from the evidence of the preceding steps between small islands out in the open sea archipelago south and west of Åland.

What do the place names enumerated signify?

As has been pointed out above, the itinerary place names mainly signify points sighted and nothing else. This is the simplest way to regard the fundamental character of the itinerary or – as it appears – rather itineraries (below). Only the most important localities to the sailors are mentioned. If a locality is missed this might be entirely unintentional (e.g. a mistake of the copyist). The conspicuous absence of some obvious sighting points, however, cannot but make us wonder at times. If we disregard these doubts in this immediate connection, there are a few comments to be made on the significance of mention.

At first it can be safely deduced from distances given that the mere mention of a large island does not include the passage of the entire island *(askø, wæggi)*, just the arrival to– or sighting – of the tip. The wording *cum askø, cum wæggi, per oslæsund* simply calculates the length of the islands or straits in question. Sometimes only a part of a large island (or promontory) in a group is mentioned (e.g. *finør, linter, widør*, all place names which appear differently or cannot be found today). When a strait is mentioned this would normally mean a rather short passage, but alternatively only the a r r i v a l a t t h e e n t r a n c e. In extreme cases, particularly at *wiræsund* and *weddesund* (if present Vätösundet), we have good reason to believe that the arrival at the strait did not even mean that it was ever passed, only sighted. Thus the *sund*- (strait) prefix in place names need not be taken as an absolute proof of an accomplished passage.

It may also be pointed out that even if a "sund" or strait formerly had existed it is not self-
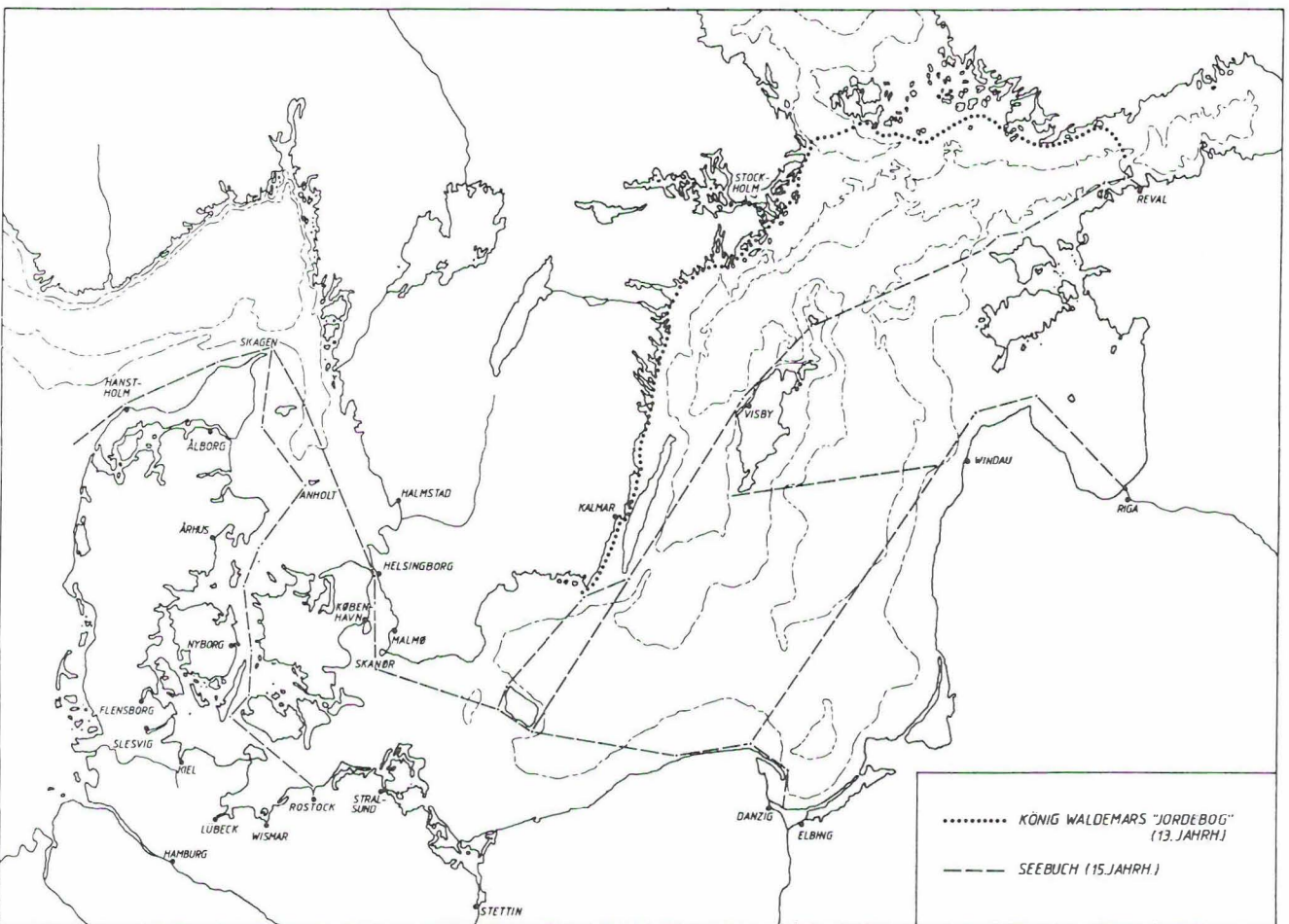
Fig. 10   A comparison of the itinerary routes of the Liber Census Daniae in 1300 and Das Seebuch
c. 1500 (Crumlin Pedersen 1983a).

Map labels: STOCK-HOLM, REVAL, SKAGEN, HANST-HOLM, ÅLBORG, ANHOLT, HALMSTAD, VISBY, WINDAU, ÅRHUS, KALMAR, RIGA, HELSINGBORG, KØBEN-HAVN, MALMØ, SKANØR, NYBORG, FLENSBORG, SLESVIG, KIEL, ROSTOCK, STRAL-SUND, DANZIG, ELBING, LUBECK, WISMAR, HAMBURG, STETTIN

Legend:
•••••••• KÖNIG WALDEMARS "JORDEBOG" (13. JAHRH.)
— — — SEEBUCH (15. JAHRH.)

evident that it could be used as a seaway at this particular time. It may in fact have been totally dry, and only applied as a place name to the locality without any other significance whatever. Secondly, it is possible that certain localities never were "sund" (straits) in the normally accepted meaning, except in a distant past. This place name element may in fact in certain cases have meant a bay or the approaches of an estuary or a river system, such as in the case of *wiræ-sund*, which obviously is another name of the Långhundraleden inner waterway (Ambrosiani 1962), now a small river. Thirdly, it has to be discussed if the term "sund" even philologically could have meant something else than a strait.

At some sites we can perceive a former strait, later a portage (swed. *drag,* e.g. Draget at *skægge nes*/Skäggenäs, Småland, Draget at *ekiholm*/Ekholmen and the inner passage at *gardø*/Gålö, both the latter in Södermanland. But none is specifically pointed out as a passage in the itinerary.

Not only islands and isle sighting marks occur in the text of the itinerary. Sometimes a b a y o r a w i d e r e x p a n s e o f w a t e r is named.

Although the only sites of which we can safely establish a port status are the very few towns (and *dalern sund*) it is extremely probable that among the mentioned localities, such as the 18–20 straits and 58 islands, are found some of the most frequented havens along the coastal route, but certainly not all of them (e.g. *hambræ, hærihammær, alæsnap*, known as excellent anchorages in later times). Only an archaeological survey, mostly under water, could establish which were used during the Middle Ages. But the principal aim of the itinerary is certainly not to enumerate haven sites. At some sites we can perceive a former strait-like character, which – as mentioned above – generally constitutes a possible haven.

Topographical categories of mentioned sites

If we are to summarize this discussion the following main categories are of immediate significance:
1) S t r a i t s : 18–20 localities, mostly with the *sund* last element (e.g. *stendor sund, siuiæ-sund*), with the above reservations. To some is at present added this suffix (but not in the 13th century text: e.g. *sporæ*/Spårösund, *alrecki*/Arkösund).
2) I s l a n d s : 58 localitites (e.g. *hothensholm, aspæ*), including such important, but small, sighting marks, as *winterclasæ.*
3) P r o m o n t o r i e s (or peninsulas jutting out into the sea): e.g. *geishammer, roxhammer, purkal (cuminpe).*
4) B a y s , w i d e e x p a n s e s o f w a t e r : *brawic, ørsebac, mare aland, mare estonum.*

Why doesn't the itinerary explicitly point to a crossing of the Baltic?

It would be tempting just to suggest that the coastal route outlined in the itinerary is the normal route in those early times and that a general transition to open sea crossings occurs only in the later Middle Ages. Crumlin-Pedersen has made such a comparison between the itinerary of the Liber Census Daniae (c. 1300) and "Das Seebuch" (with the Baltic part dated c. 1500; Koppmann 1876, Goetze 1975: herefig. 10). This approach is, however, not a necessary outcome of our discussion. Obviously, ships had made these crossings long before the 13th century (below). On the other hand, Óttar and Wulfstan neither record any return voyage, nor does the Mediterranean itinerary, but "Das Seebuch" certainly does. Since no return voyage is recorded in the itinerary, could it be that contrary winds simply made a crossing more
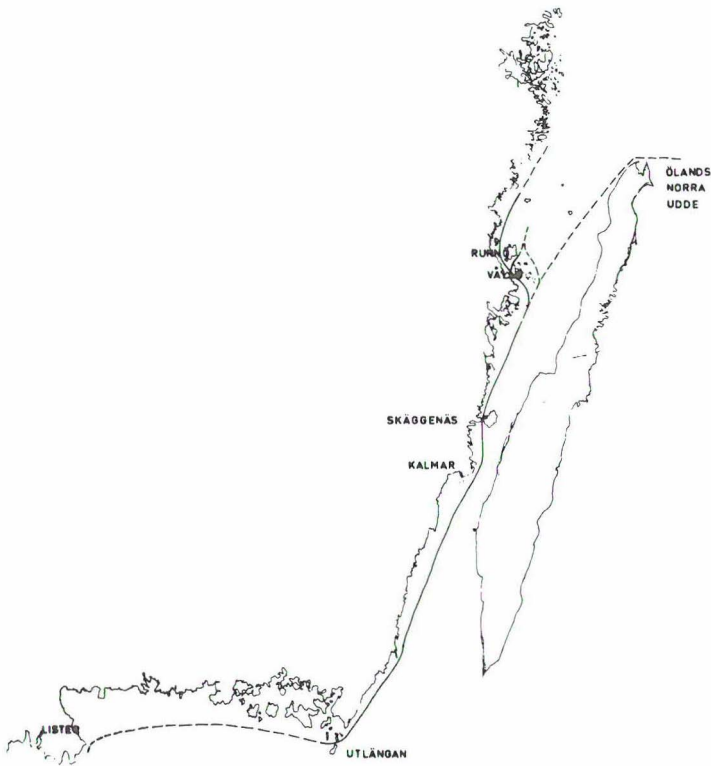
Fig. 11   *The possible take-off point for Gotland, as illustrated by Nils Blomkvist (1979).*

difficult in the first part of the sailing season? Maybe only the return voyage was a regular crossing, but in this case so much part of standard behaviour that it was not considered worth mention in the itinerary proper.

However, the winds of the Baltic are certainly much more variable than those of the Atlantic, where the prevailing wind comes from the west, and so it is not remarkable that in historical times most seaways in the Baltic are found in the neighbourhood of land: *Distanzen von 60 bis 80 Seemeilen, wie sie sich beispielsweise auf den Strecken Gotland – Livland oder Bornholm – Revekol ergaben, waren von einem Koggen bei günstigem Wind durchaus in 20 Stunden zu bewältigen. Anders auf dem Atlantik, wo der über weite Meerräume vorwiegend aus West herankommende Wind eine große Richtungskonstanz aufweist und daher als Hilfsmittel für die Navigation benutzt werden kann, macht die von Meer und Land zerklüftete Landschaft der Ostsee durch unstete Windverhältnisse diese Art des Kurshaltens unmöglich. Kein Wunder also, daß die Seewege in der Ostsee sich überwiegend in Landnähe befanden.* (Goetze op.cit.: 73).

Nils Blomkvist (1979: 184 with ill., here fig. 11) believes that there is a reference to a possible take-off point for a crossing to Gotland in the text of the current itinerary. In the words of the text he finds this meaning at *waldo* (Vållö island): *si placet ire per latus terre.* This wording is unusual in the itinerary text as a whole. Blomkvist assumes that this sentence means the entire sailing route henceforth: *if you want to go along the coast* as contrasted to the open sea route, implicitly: *that many follow from here.*

In that case the next natural sighting point would be Blå Jungfrun island, which, as we have seen, is curiously enough, not mentioned at all in the itinerary. Secondly the northern cape of Öland would be named, where the sea crossing proper to Gotland started. This route is not quite unknown in later times, but according to "Das Seebuch" of c. 1500 the normal sailing practice was then rather to proceed outside of Öland making the landfall of Gotland parallel to the coast of this large island (figs. 12–13).

On the other hand, the elementary eastern direction to Visby a little further north than the Blomkvist route may have made a crossing by way of Tjust more probable (itinerary points of *winy, sporæ, hambræ, askø*). At least this is natural endroit of the compensating Swedish legend that in 1361 the returning ship of king Valdemar Atterdag of Denmark with its fabulous loot from the Swedish (Hanseatic) town of Visby foundered and was lost:

> *För Tiusta skäär uppa en steen*
> *Bleff bade Godz ok Skipp inne*
> *Ok alla the i skippet voro inne*
> *Förgingos med i det sinne.*

> *At the islands of Tjust on a rock*
> *Were both goods and ship aground*
> *And all those who were in that ship*
> *Were lost at the same time.*

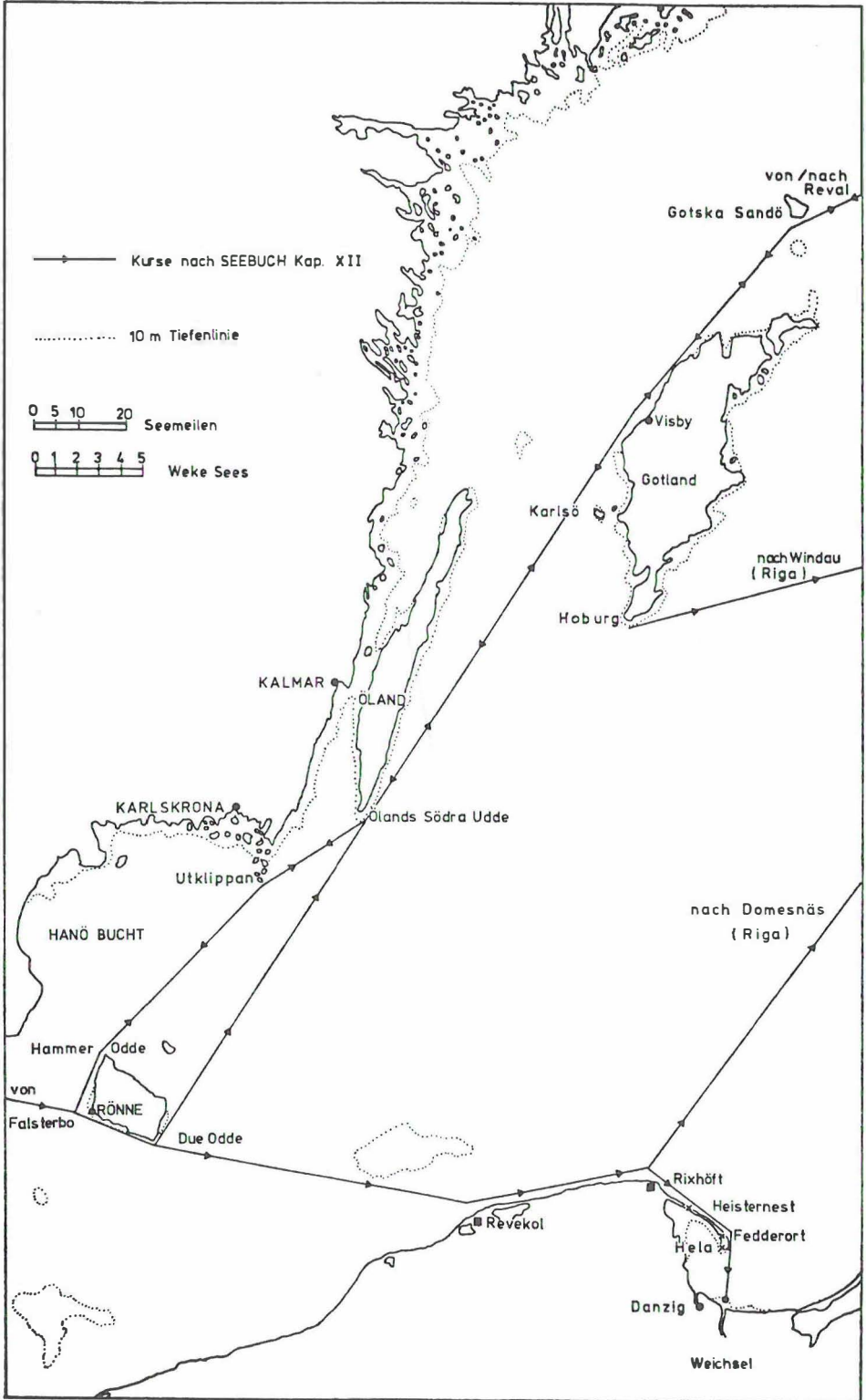(Scriptores I: 2nd part: 57, translation by the present author).

This particular tradition seems, however, to be influenced by another historical event in 1447 when the union king Christopher of Bavaria barely escaped from a foundering on a rock in Tjust (Karlskrönikan, KK 7250 etc.).

Of course this concerns a return trip from Gotland, and it may very well be that varying routes were chosen for different wind directions. Still, the significance of the wording of the itinerary can be explained in another and more reasonable way, according to the terms of the itinerary itself. The sentence quoted, *si placet ire per latus terre* simply would point to the immediate passage northward from *waldø* (Vållö). The claim of an alternative route following the route *per latus terre* is fulfilled by the mention of the next point, i.e. *runø* (Runnö).

According to the views of the present author this means inside *runø* (Runnö), admirably shown on the map supplied by Blomkvist (loc.cit. here fig. 11 cf. fig. 9). It is obvious to me that this refers to the fairly sharp indentation of the coastline at the level of *waldø* (Vållö), continued by way of *runø* (Runnö), and further on to *klineskær/diuræholtsnub*.

The unspoken alternative then would of course rather be the "outer" sailing route outside *waldø* (Vållö) in a due northerly direction, by way of Furö island (the next sighting point, but not mentioned, as little as Blå Jungfrun on the Gotland route proposed by Blomkvist) to *roxhammer* (Uthammar). If running before a favourable southerly wind at *waldø* (Vållö), this would be a natural choice for the continuation of the voyage.

Roxhammer (Uthammar) of the itinerary is a suitable next goal of the passage, since it indicates the point where the difficult archipelago route starts when approaching from the south. This is accordingly, as well as the indentation at Runnö, a transit point or area, according to the theory of the author a natural point to look for a guide (pilot), if in unfamiliar waters (below). In fact, this could also have been a suitable candidate of a starting point for an eastern route to Gotland, if you want to avoid the inner route proper, which is at the beginning of the *roxhammer* junction.

Kurse nach SEEBUCH Kap. XII

10 m Tiefenlinie

0 5 10 20 Seemeilen

0 1 2 3 4 5 Weke Sees

von /nach Reval

Gotska Sandö

Visby

Gotland

Karlsö

nach Windau (Riga)

Hoburg

KALMAR

ÖLAND

KARLSKRONA

Ölands Södra Udde

Utklippan

nach Domesnäs (Riga)

HANÖ BUCHT

Hammer Odde

von Falsterbo

RÖNNE

Due Odde

Rixhöft

Heisternest

Fedderort
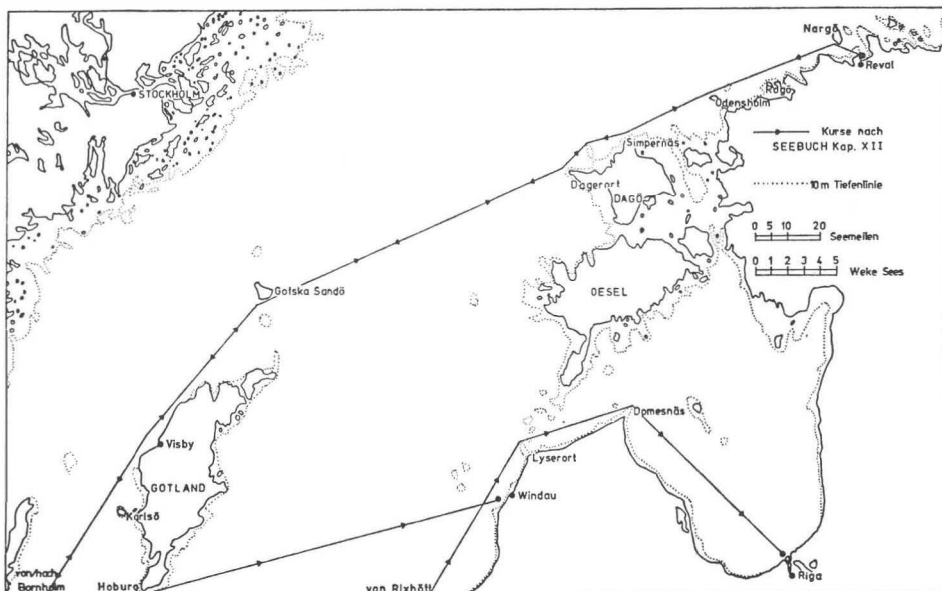
Hela

Revekol

Danzig

Weichsel

Fig. 12–13   *The sailing routes by way of Gotland to the eastern Baltic, according to Das Seebuch c. 1500 (Goetze 1975).*

I do thus not deny the unusual wording of the text, but this is accordingly most reasonably explained by the likewise unusual indentation of the local coastline, the former continued due northward direction maybe leading to the loss of the sight of the mainland. Other textual circumstances may rather speak for the thesis of Blomkvist, such as the exceptionally long intervals between the points mentioned in the itinerary before *waldø.* This would, as mentioned above, rather be interpreted as an adaptation to the nature of the coastline which does not permit any stops to an outsider, nor provide many sighting points. A medieval mariner presumably would want to reach the central part of the strait at Kalmar *(calmarne)* as soon as possible. In the text he certainly does.

On the other hand, crossings of the open sea are in fact mentioned in the following parts of the itinerary, not just the *mare aland* (Sea of Åland, if this is to be understood as a compound place name as of today) passage from Sweden to the Åland islands *(linæbøtæ*/Lemböte), and *mare estonum,* but also the straight route from *arnholm* (Arholma) to *hangethe* (Hangö) in Finland *directa linea,* and from *hangethe* to *hotensholm* (Odensholm/Osmussaar) in Estonia (fig. 14). Therefore, no inhibition on the mention of existing (or even ordinary) crossings of open water seems to be found in the itinerary.

This discussion, however, brings to the fore an irritating question: why doesn't the route cross the Baltic directly to Gotland and further on to Reval (Tallinn)? It is obvious that such passages have been undertaken considerably earlier than AD 1300, when the itinerary seems to have been copied to its surviving version (Modéer 1937). It could be, of course, that the sailing route description (or shall we say tendency?) applies to those early times, but would it really by any realistic terms depict a situation that it is more than 100 years old? Well, the other (Mediterranean) itinerary certainly does!

Already during the first part of the 13th century, maybe even earlier, the first dangerous crossings round the Cape of the Skaw (Skagen) of Danish Jutland are made. The Limfjorden passage (inner route) through the present peninsula of north Jutland must have been closed by
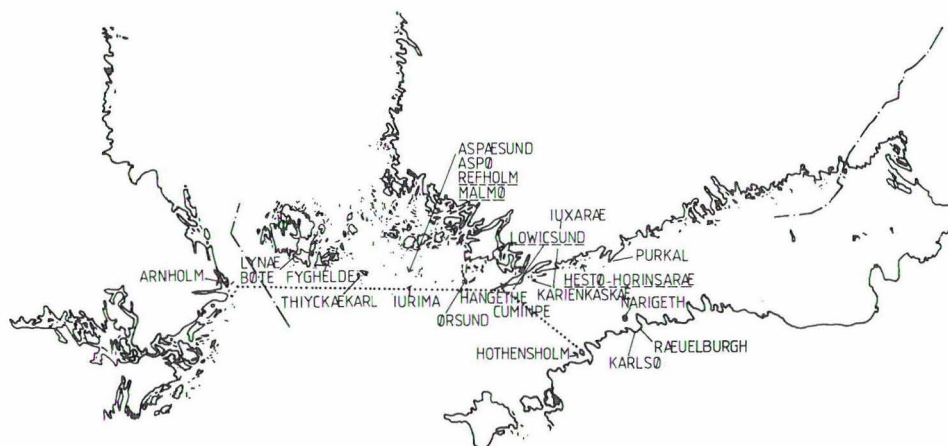
Fig. 14 *The eastern part of the itinerary. Note the straight routes indicated by the stippled lines from* arnholm *to* hangethe *and from* hangethe *to* hothensholm.

sand reefs before the middle of the 12th century. The privileges of AD 1251 to the Scania mar-
ket of the Danish king Abel mentions *wmlandsfaræ* = "ummelandsfarer" (the Skaw naviga-
tors) for the first time (Ventegodt 1982: 60). Some ships didn't get round anyway, as is shown
by e.g. the Kollerup cog (Jeppesen 1979, Kohrtz Andersen 1983) but some didn't, after all, in
the 20th century either.

Coastal sailing – but not unduly close to the land – may have been the rule in the 9th century
if Óttar's and Wulfstan's routes are to be generalized, which is as doubtful as the generaliza-
tion of our itinerary route in the 13th. In the circumstances, we may of course assume that the
Liber Census route was rather representative for the category of the landlubber scribes, but
also that more daring crossings of the Viking Age may be traced in ship loads of soapstones
originating in southern Norway, and most probably exported by way of Skiringssal (present
Kaupang, the end and starting point of Óttar), which have been found in some coastal (wreck)
sites of northeast Jutland (Andersen 1968).

The important historical chronicle of Henry of Livonia in 1206 (1975, X9: 56–57) mentions
the first cog ships of the Baltic in connection with the relief of the siege of Riga *cum duobus
coggonibus*. Cogs may have been the regular long-distance sea-crossing ship type of its time
(cf. the positions of such ship wreck finds: Crumlin-Pedersen 1983: 234). The crusaders of
Livonia went directly to Visby on their route to Estonia in 1203 (Henry of Livonia, op.cit.,
VII: 1, 25f.) and by way of the strait of Fårösund *(Sund)* in 1210 (op.cit., XIV: 1, 107).

Aspects of defence

One of the possible explanations of this coast-hugging sailing route system, particularly in its
presumably older, inner, parts, may in fact be protective considerations (Westerdahl 1984).
The oldest system may originally have been partly military, seen from the point of view of the
surveillance of the route by guard ships belonging to the ledung (levy) fleet, as assumed by
Schück (1950). In this case the concept of an officially endorsed seaway may well be related to
the later legal concept of the *King's Route* (Swed. *kungsådra;* or all men's route, Swed. *aldra
manna led*, Norse *þjóðleid*, referred to in the medieval provincial laws).

As the present author has pointed out elsewhere (op.cit.), the sailing route of the itinerary corresponds to the principal area of the Swedish ledung (levy fleet) system, and the outer guard and defence (the beacon chain) of the Swedish medieval realm. If this means that the route originally was organized for the protection of these routes or possibly the other way round, the system of surveillance created a regular sailing route, cannot be decided in this context.

Strictly speaking, there is no other way of passing along the east coast of Sweden than this route and its extensions, and there is at the same time no way of defending the realm at sea except in this coastal area with its archipelagoes. So this discussion necessarily at some point degenerates into an argumental chain running around in circles. At least it could be surmised, as has been done above, that it would be remarkable if the Swedish outer line of defence would have accepted the arrival of the Danish leding fleet as of AD 1219 to attack Estonia, if this is surmised to be the ultimate background of the Danish itinerary. On the other hand, there may perhaps be a connection to the medieval Swedish colonization of coastal Estonia? At any rate cargo ship crews would have found a couple of good reasons to follow the inner route to Estonia.

It is in this context highly suggestive that we find the important border site of the ledung, in the Hälsinge law book (14th century?) called *aspa sund,* along the itinerary route. But suggestive of what?

Ganger lepunger ifwer haff æller utt wm aspa sund þa waeri saklösir wm lepungxlamar (Schlyter 1844: 245).

...if the ledung goes over the sea or outside of aspa sund there is no obligation to pay the war contribution (ledungslama; in the place of provisions, implicitly: henceforth the levy fleet must live on contributions from other parts of the realm or on plunder in enemy territory).

Aspa sund of the Hälsinge law book must be situated on the Liber Census route whichever identification is suggested. There are thus two present island localities in the Stockholm archipelago called *Aspö:* 1) at the border between the provinces of Uppland and Södermanland and close to the itinerary sites of *rudmi* (Runmarö) and *neffø* (Nämdö), 2) just south of Dalarö *(dalern sund)* at the classical entrance to or exit from Stockholm to the south. Moreover, there is 3) Aspö island *(aspæ/sund)* of the itinerary, situated in Finland, southwest of the Åland archipelagoes.

Kumlien (1933: 38, notes 44, 46) has identified no. 2 as the place of reception of the union king Eric of Pomerania in AD 1435 *(aspa sund,* Karlskrönikan: KK 1759). This sounds plausible but it does certainly not follow, as Kumlien suggests, that this site is identical to the *aspa sund* of the Hälsinge law book. No. 1 seems to be mentioned as *aspa sund* in the general town law of king Magnus Eriksson in AD 1350 as the limit of the jurisdiction of Stockholm (Radzstuffw B, Schlyter 1865: 262, Holmbäck/Wessén 1966: 175, note 74, p. 194f., the latter authors proposing that this is the site of the Hälsinge law book and identical to no. 1, with the borderline of the provinces). Hafström (1949: 72), on the other hand, suggests that *aspa sund* of the Hälsinge law book is *aspæ/sund* (Aspö) of the itinerary, an excellent out-harbour in an island strait (sund) of the open sea. Already Schlyter (1844: 472, index 192) sensibly rejects the improbable identification with Aspö, a large settled island in the approaches to Karlskrona town, Blekinge (inside *utlengi,* Utlängan, the first point of the itinerary: cf. Schück 1950b: 472, who revives this argument).

To the hälsings or other Bothnians (and some of the Finns), for whom the Hälsinge law was originally codified, the ledung route, which invariably led eastward during the High Middle Ages, must have run by way of Signilsskär or Arholma *(arnholm)* to the Åland islands. Aspö *(aspæ)* of the itinerary then appears to be a much more natural locality than this comparatively insignificant island in the south part of the Stockholm archipelago, even if they both may be

well-known to the scribes of this city. The only real asset of the second alternative seems to be its name and the fact that it is situated close to the border of the two provinces. As has been pointed out, the itinerary in this area only mentions other sites (above).

If *aspa sund* of the Hälsinge law book is supposed to be the meeting-place or take-off point of the ledung fleet there are a few other comments to make. It would in this case not be suitable to let everybody know when the king or jarl (earl) gathered his fleet for an overseas strike. At Dalarö there is no chance to remain in hiding while the squadrons of the provinces were summoned. At Aspö, on the Finland route, you would at least be at a far-off place to informers on the mainland. Still, however, you would be on the main sailing route. On the other hand, there are also local defensive aspects (guard duties, supervision of the routes). This agrees well with the assumed connection between routes upheld and protected by the king and the ledung system. Unfortunately, it is hard to prove.

If this protective aspect is accepted as an alternative interpretation of the general character of the route, it must at the same time point to a rather early part of the 13th century, probably before AD 1227, when the power of sea pirates was definitely broken in the Estonian area, the last stronghold being Ösel (Saaremaa) with the collapse of Estonian pagan independence. In fact, as late as AD 1226 arrives a whole fleet loaded with Swedish slaves, mostly captured females, at the coast of the Estonian islands. This raid is the immediate impetus to the last and decisive crusade against these islands. In the beginning of this century there are still attacks from the area as far south as the Lister peninsula (*Listerby:* or is the present parish of Listerby referred to?) of Danish Blekinge, inside *utlengi* (Utlängan), the first point mentioned in the itinerary. The record by Henry of Livonia concerns the year AD 1203 (op. VII, 1: 25) The Swedes sometimes retaliated but had not yet reached their full strength. Their reaction belongs to a later epoch, when it is mainly directed further east, towards Russia and Carelia (Novgorod). It is very doubtful that the itinerary would depict a situation before 1227, but still possible. After all, the main body of the Liber Census Daniae, the tax register, is dated to the 1230's. The place name for Reval/Tallinn, *ræuelburgh,* indicates an existing castle *(burg),* which cannot have been in existence before the 1220's (the assumed predecessor, the native Estonian fort on the Toompea hill has not yet been found). The first mention of Stockholm town in a medieval source excepting the itinerary is, moreover, in AD 1252. *Stokholm* of the route description may of course refer to an earlier site than the town proper (the remains of such a precursory settlement have, however, not been found in the recent large excavations at Helgeandsholmen [Dahlbäck 1982, Ödman 1988]). But would it be interesting then, to an itinerary, where almost no other mainland sites are of interest? Kalmar obviously dates from c. AD 1200 (Blomkvist 1979).

In all probability, however, no serious maritime danger could have existed from the Estonian side when the itinerary was written down in its present form (c. 1300).

On the other hand, there might have been other dangers than Estonian pirates worth observation after AD 1227 in the area. For example, Carelians may have been active for all that we know, which indeed is scarce. Their great period would have been during the first two decades of the 14th century.

The protective explanation is fairly doubtful in the circumstances, but certainly not quite impossible. However, the explanation offered by the Baltic winds seems to be a better primary answer to the question of the heading.

What relevance would the Liber Census route have to the Norrland sailing route and vice versa?

A simple answer to this question is that both routes are thorough-going and running along the coast in archipelagoes. Besides, they together cover almost the entire length of the Swedish east coast.

As has been pointed out above, the survey of the Norrland sailing route finished southward at the junction of this route and itinerary routes of King Valdemar's Land Register. This was intentional from the very start of the survey. An implicit observation was that the latter route was the most important in a North European perspective, the former being more of a local character, if local is an apt epithet for a coastline of altogether a couple of thousand kms. On the other hand, the route to and from the sparsely populated north – even if comprising parts of present Finland – certainly is no main route, and the prerequisites of economy are quite different from the south.

It has to be kept in mind, however, that during the Middle Ages a considerable colonization process has been assumed to take place in the Bothnian coastlands. To some extent this colonization may have been internal, but parts of it required shipping of colonizers from the south, either from other parts of the coast of Norrland or further southward. This colonization was encouraged and partly organized by the church, the crown and the leading lords, presumably to counteract the movement of the Greek-Orthodox Novgorodian Carelians on the opposite side of the Bothnian bay. This could apparently mean that the measures taken by these forces to ensure safe shipping (in the field of sea marks, pilotage or supervision of the route, e.g. in the case of wrecks) may have been as advanced and as modern as along the main routes – if not even more so.

In the far north there are obvious signs of West-Finnish and Carelian exploitation and settlement, most of which is certainly of a maritime nature. Fur hunting and trade were reasonably the greatest attraction to the outside, where the interest was rising all through the epoch. Together with northern Russia the Scandinavian north constituted the most important resource area in Europe for the finest winter-dependent fur animals.

The possible contribution of an itinerary route to the interpretation of a non- itinerary route or vice versa would appear slight. But since we can safely surmise that the development of navigation in general largely depends on diffusion from the principal routes to the local ones, at least the over-all character of the itinerary may give some hints. Do we have any such material? Obviously we do have. The sequence of the sites mentioned shows a sheltered route, reasonably employing anchorages in natural havens for the night. Probably these havens were situated in straits between islands along the route – not necessarily on the route itself, which is unduly risky – of which the principal indication is topography and the place name element *sund* ("strait"). Experimental sailing and topographical studies in the route area confirm the strait theory of the out-ports (e.g. Linnman 1951, Westerdahl 1978, 1984). In Norrland the meagre historical material offers a few examples of journeys, undertaken by the archbishops of Uppsala 1346 and 1374, where even meetings take place in havens of a *sund* character (Hausen 1890: 153ff., Diplomatarium Norvegicum 3 no. 395): *Companasundh* (parish of Kalix, Norrbotten, localized on a map of AD 1647 by the author and independently by dr Erik Wahlberg, Soukolojärvi, cf. Pellijeff 1967: note 14, p. 85), *Härnösund* (later in 1585, the town site of *Härnösand*), *Ragnholmssundh* (present *Raholmen,* parish of Alnö, Medelpad with the *sund* presently on land) and *Swartasund* (present *Svartsundet,* Norrala parish, erroneously localized by Ahnlund 1920). Moreover, whilst the commonly assumed character of the main route slowly changed during the 15th and 16th century to include open sea passages as a major alternative, local traffic still stuck to the itinerary route, which in its essence partly still is iden-

tical to *gamla skutleden,* "the old *skuta* sailing route", *skuta* even today being the symbolic term of local vessels. Therefore, there is nothing peculiar in the old local system of a coast-bound route along the Norrland coast. The navigational tradition of the Gävle burghers, fishing long-distance for the summer season along this coast, is attested by oral tradition to *kära kusten* ("hug the coast" or "steer alongside the shore": Vedin 1930). The "itinerary" points of Nyström's sailing guide in 1788 (reprinted and used well into the 1840's) still mirror some remnants of the old sailing route pattern of night and emergency havens in straits and small bays, at sheltered promontories and islands. This is only one of the valuable aspects of the large potentialities of a survival area in the north. We may thus assert with some support in the routes of the current itinerary of the 13th century and of the archbishops in the 14th century, that one of the fundamental bases of medieval shipping in Scandinavia has been established, the preponderance on sheltered *sund* (strait) localities as passages and at the same time, but possibly not at the same localities, out-harbours or havens. The over-all importance of these straits is, however limited to the natural forms of the northern coastal landscape with extensive archipelagoes of naked rocks of a constant character. Maybe, the counterpart in the southern Quaternary landscape of the south Baltic would be the *lagoon harbours* (Lundström 1971, Crumlin Pedersen 1983b), the creation of which is dependent on sedimentary and other processes of the sea.

Another important experience of the analysis of the circumstances of the Norrland coast is the establishment of coastal transit points. Mostly these sites or areas are situated at the transition to other coastal features, i.e. from the deep Ångermanland coast to the shallow Bothnian basin, with dangerous shoals stretching far out into the sea, or at take- off points for the crossings to Finland. Some of the sites can be connected with land roads or inner routes leading from a hinterland to the interior. At almost all such places we find ferry stations, pilot sites and/or stage points for an inner route transport system in the beginnings of historical times. Since tradition dies hard in a maritime environment, it is the inevitable conviction of the present author that these conditions reach far back into medieval times. Besides, the traditional transport pattern of Norrland as a survival area forms the basis of the general theory.

In the analysis of traditional maritime usage in Norrland later known pilot stations have been studied. If cut down to essentials some localities have been found to be situated at important transit points – or rather zones – to other coastal features. They are thus depending on the prerequisites of nature. It is very probable that shipping from the outside would have needed guidance at these transitional zones even during the Middle Ages. The result has been compared to the itinerary coastline and to the sites pointed out by the ensuing considerations. The distances between the interesting localities show a certain pattern which might be intentional:

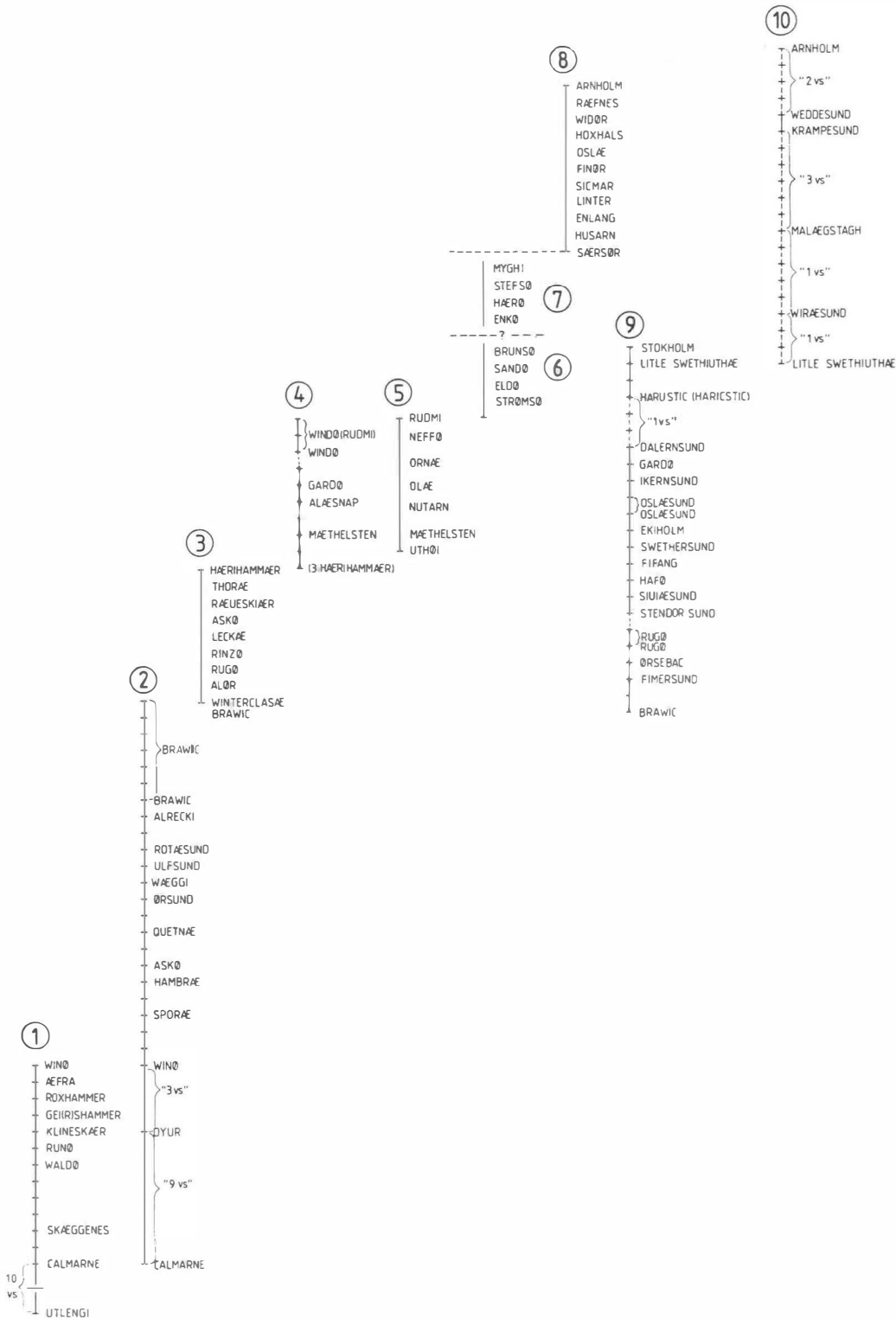| 70–90 kms (c. 10 vikur):	200 kms (c. 25 vikur):
The itinerary:	The itinerary:
Bråviken – Herrhamra	Kalmar – Bråviken
Herrhamra – Runmarö	Vinö – Kalmar is c. 150 kms (less than 20 vikur)
Stockholm – Arholma	
Utlängan – Kalmar is slightly longer	Norrland:
	Hornslandet (Arnön) – Skags udde
Norrland:	Skags udde – Bjuröklubb
	Bjuröklubb – Torneå
Arholma – Öregrund	
Öregrund – Gävle	
Gävle – Söderhamn	

Fig. 15   *The structure of the Swedish part of the itinerary text.*

This may be coincidence but the reasonable far-range pilot stretches would be found within these distances. They were anyway seldom longer, according to records of the late 16th century (e.g. Wirsén 1968). But the study of such distances certainly requires more attention than hitherto devoted to it.

The significance of the Liber Census itinerary

It is thus important to remember that the experiences of the study of the itinerary route cannot safely be generalized since we know next to nothing of its background. Unfortunately, it is easy to argue in a circle, most would-be descriptions of medieval sailing practices in Sweden being founded on this very itinerary. Anyway, in the circumstances the anxiously coastbound journey seems to be the only possible one in the light of the sequence of identified place names that have been enumerated. Travelling was reserved for day-time. At night the sailors slept on board or on land in well-sheltered harbours with good anchorages (cf. e.g. Erik Jonsson in Lybeck [ed.] 1945: part I: 332) above all protected from the northeast, which presumably already was the prevailing storm direction in the Baltic, and as well the general direction of the itinerary route. This contention could easily be confirmed by later traditional practices in local shipping.

But let us now try to get the own particular character out of the itinerary text. First and foremost, the itinerary is a sequence of place names and some distance measurement in between. These sites appear to be meant to supply general information on the passages accomplished. Some important sighting points, such as Blå Jungfrun and Furö island, are, however, missing for unknown reasons. In the north (particularly in Finland) and the extreme south, the lacunae are a-plenty. No harbours are explicitly mentioned. The itinerary is, accordingly, next to worthless to a navigator. It is thus possible that the itinerary was made up purely for fun – or rather to supply information on the geography of the route, in the same way as the journeys of Ohthere and Wulfstan were once used by king Alfred. But the structure of the notes may still reveal more on the practices of sailing than hitherto surmised. The most important observations are the following:

1) By way of a careful analysis of the identified sites it is obvious that the itinerary, particularly on the Swedish side, consists of several more or less self-contained and overlapping sections of the sailing route or sequence.
2) Moreover, it can be deduced that these sections also contain stretches with and without distance measurements expressed in *vika (vikusjö)/vikor*. A certain difference is also detectable in the variations between the words *usque- (de)inde,* most clearly in the first sections.
3) The sailing route has got one goal except Reval (Tallinn), i.e. Stockholm, where one route section starts anew, significantly enough with consistently erroneous distance measurements (and some attendant problems concerning the identification of the sites, as we have expounded above).

Less decisive, but equally remarkable, would be the following:

4) There are much longer distances between some points mentioned on parts of the sailing route, particularly in the south and in Finland, than what is the case in the central section.
5) Some places are mentioned more often than others, possibly reflecting some kind of transit function.

There is, I believe, only one simple explanation to this pattern in the itinerary text. The separate route parts or sections may most reasonably be explained by assuming that they had been recounted by navigators who were specialized in those parts. The differing records have later

been collected by a scribe, who did not know much of the details but certainly knew the general layout of the route, and who placed these fragments in a sequence without any significant complementary addition or attempts at coordination. In an earlier treatment on the itinerary of the Liber Census Daniae I have mentioned this possibility but never developed it further (Westerdahl 1978: 39). I suggested that the navigators in question were pilots, presumably local or even Danish far-range pilots.

The structure of the itinerary text is illustrated schematically by fig. 15.

The following route parts are either without distances or supplied with distances:

a) *utlengi – brawic*, sections 1–2, *with* distances.
b) *brawic – hærihammær*, section 3, *without* distances.
c) *hærihammær – rudmi*, section 4, *with* distances.
d) *uthøi – rudmi*, section 5, *without* distances, and:
e) continuing in the same way in sections 6–7, but the ensuing place names are much more dense and are in fact to a surprising degree unidentified or at least unknown today, suggesting a different pattern, *without* distances.
f) the continuing route since section 5, but on the other side of the border between section 5 and sections 6–7: *særsør–arnholm*, section 8, *without* distances.
g) *brawic – stokholm*, section 9, *with* distances, which moreover seem to be unusually standardized and to some extent underestimated.
h) *stokholm – arnholm*, section 10, *with* consistently erroneous distances and quite a few unidentified place names.
g) *arnholm – ræuelburgh*, section 11, *with* distances, but with much greater intervals between most of the enumerated points than on the Swedisch side (except in the extreme south).

There are a couple of other significant traits. Interruptions in the text are thus found in three sectional sequences:

a) *utlengi – winø*, section 1.
b) *calmarne – (dyur) – brawic*, section 2.
c) *brawic – windø (rudmi)*, sections 3–4.

Furthermore a division may be found at *stokholm*, between section 9 and 10, possible also at *calmarne*.

If the theory is extended to reasonable distances of independent pilotage the following stretches are of current interest, where mostly not a single intermediary point is mentioned:

a) *utlengi – calmarne*, section 1.
b) *arnholm – lynæbøtæ* (or directly to *hangethe*), section 11.
c) *lynæbøtæ – thiyckækarl*, section 11.
d) *thiyckækarl – aspæ (sund)*, section 11.
e) *aspæ (sund) – ørsund*, section 11.
f) *ørsund – hangethe*, section 11.
g) *hangethe – purkal* (or directly to *hothensholm*), section 11.
h) *purkal – ræuelburgh*, section 11.

Of course the theory could also be inversely applied. If we apply the above references outside of the itinerary text, i.e. on possible entrances to towns, the following places would be interesting:

Kalmar
Söderköping (alternative entrance to Norrköping at *alrecki/brawic*)

Norrköping *(alrecki/brawic)*
Nyköping *(fimersund/alør)*
Trosa *(askø/hafø)*
Stockholm
Reval/Tallinn

Finally the number of mentions may be considered:

arnholm	6
askø (Tjust)	3
brawic (probable thought of as identical with *alrecki*)	4
klineskær/dyur/diuræholtsnub	3
hangethe	4
lynæbøtæ	3
rugø (not relevant?)	3
purkal	3
waldø	3 (with its neighbour *runø* 1)
windø	3 (with *rudmi* 2)

The study of maritime place names with an obvious medieval tinge point out e.g. the following maritime cultural centres along the itinerary route (Westerdahl 1978: 39ff., cf. Westerdahl 1989: 143ff., passim): Vållö *(waldø/*Runnö *(runø)* area, here fig. 9, Vinö *(winø)*, Arkö *(alrecki)*.

By combinatory measures we can thus deduce that the following points were particularly important as – what I have called – t r a n s i t p o i n t s during the conception of the itinerary. The most obvious ones according to the analysis of the text are marked out by italics:

1) *utlengi* (Utlängan, Blekinge), the starting point of the itinerary. Since we know nothing of what came before it may appear doubtful. However, at this very site the coastal route starts, i.e. it marks a transition to a new stage of the journey.

2) *calmarne* (Kalmar, town). Besides being important as a point of division in the itinerary text, Kalmar as a town would certainly have recourse to official pilots. Interruption in the text.

3) *waldø/runø* (Vållö–Runnö, Småland) – the unusual mention of alternative routes.

4) *winø* (Vinö, Småland) – interruption of itinerary.

5) *sporæ* (Spårö/sund, Småland) – possible recourse to town pilots at Västervik.

6) *alrecki* and *brawic* (Arkö, Bråviken, Östergötland), as the same site. Beside the general interest accorded these sites in the itinerary, possible recourse to Norrköping and Söderköping town pilots.

7) *fimersund/alør* (Femöresund/Ålö, Södermanland) – possible recourse to town pilots of Nyköping.

8) *askø/hafø* (Stora Askö/Lilla Askö, Hänö[?], Södermanland). Possible recourse to pilots of Trosa town area.

9) *hærihammær* (*-uthøi;* Herrhamra, Utö, Södermanland) starting point of route part.

10) *rudmi/windø* (Runmarö/Vindö, Södermanland/Uppland) – end and starting point of route parts.

11) *stokholm* (Stockholm) – point of division, recourse to town pilots.

12) *særsør* (Särsö, Uppland) – starting point after a confused section of the itinerary with a series of unidentified or wrongly arranged place names.

13) *arnholm* (Arholma, Uppland) – end and starting point of different sections, the take-off point for the crossing of the Sea of Åland or directly to *hangethe* of the Finnish mainland.
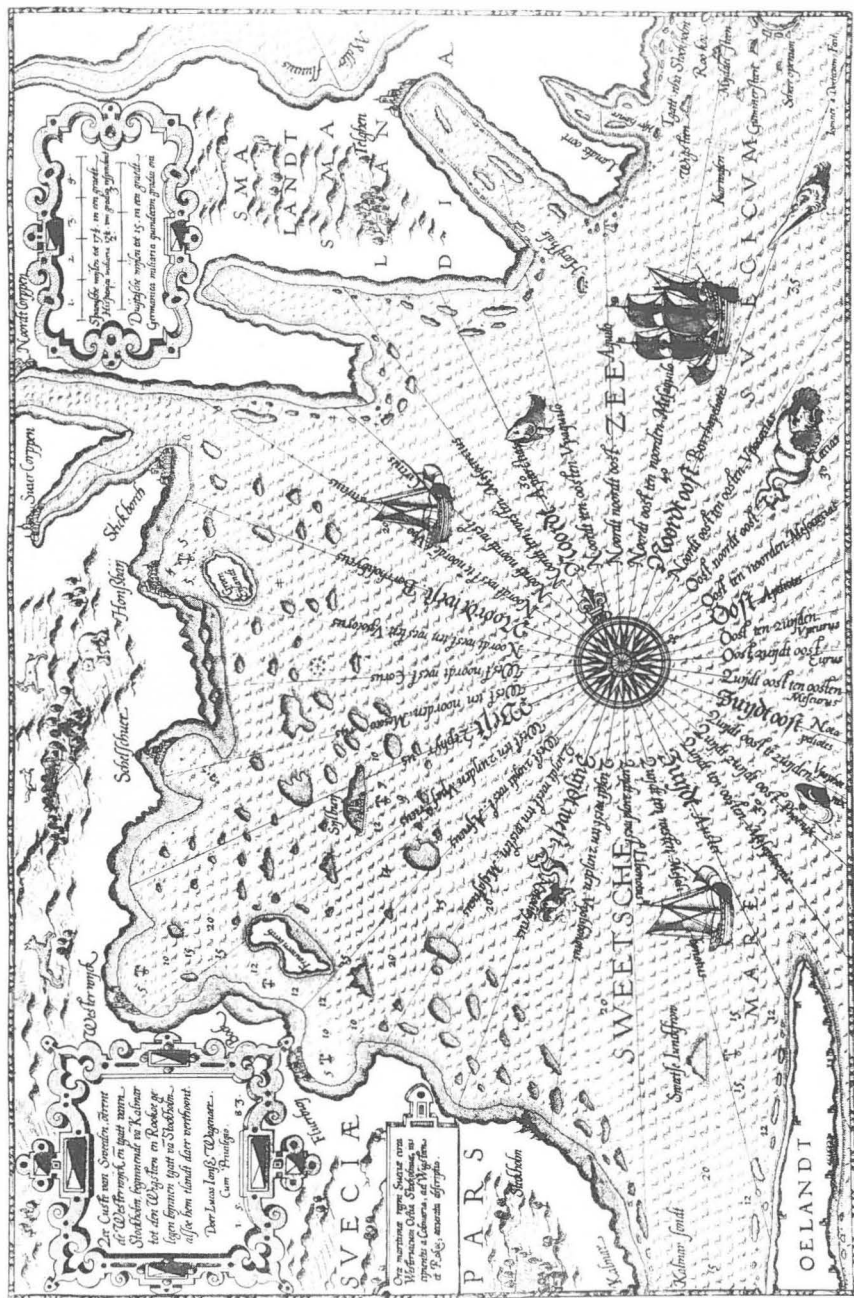
Fig. 16 *The need for constant guidance by experienced local pilots in the archipelagoes in the Baltic in the late part of the 16th century is well illustrated by this map of the coast from Kalmar to the out-skirts of the Stockholm archipelago (Waghenaer: Speculum nauticum, 1585). To a sailor the map is worthless. The choice of place names is possibly the only interesting trait. The bad foreign descriptions and maps of Swedish waters explicitly were among the motives behind the* Siö-book *by Johan Månsson in 1644.*

14) *lynæbøtæ* (Lemböte, Åland) – route part end and starting point?
15) *thiyckækarl* (Kökar) – route part end and starting point?
16) *aspæ* (Aspö) – route part end and starting point?
17) *ørsund* (Örösund/Kyrksundet, Hitis) – route part end and starting point?
18) *hangethe* (Hangö) – route part end and starting point?
19) *purkal* (Porkkala) – route part end and starting point? Two route parts, one directly to
    hothensholm (Odensholm, Osmussaar).
20) *ræuelburgh* (Reval/Tallinn) – recourse to town pilots, end of itinerary.

It is a remarkable fact that all of these sites/areas have had pilot stations in historical times, except Särsö in the Stockholm archipelago. But many others along the route also have (Lähte-nooja 1948, Medin 1952, Wirsén 1968). The most interesting points are, besides, marked out by the structure of the text, transit points, situated at the transitions to other topographical features (Vållö/Runnö, Arkö, Arholma etc.), a tendency which has found an obvious counter-part in the analysis on the possible pilot sites of the Norrland coast.

Is it probable that a pilotage system existed during the Middle Ages?

In the absence of any kind of maps or other navigational aids, such as regular sailing hand-books, the demand for local expertise must have been considerable. Particularly the archipel-ago parts of the northern coasts are extremely difficult and very risky to navigate in on one's own. Already Dahlgren (1896) stated the need for pilots in the most difficult parts of the iti-nerary route. Wirsén (1968: 14), who describes life in an island pilot station of Småland, south-western Sweden, carried this argument further by suggesting that *precisely in those places which are mentioned by the itinerary were waiting "knowledgeable" men to lead the ships on-ward*. This seemingly presupposes the existence of settlements during the 13th century in the area, at least seasonal, and mainly meant for fishing, and at least a few permanently residing farmers on islands, who may be paid for their assistance during the sailing season.

Let us assume a possible scenario: With their rowing boat in tow the piloted ship would go only so far that the pilot would be able to return by rowing back to his abode in a reasonable time (e.g. 4 vs. 32 kms?). Long distance pilotage would perhaps have been possible up to 10 vs. (70–90 kms) or a little less. Almost any able-bodied fisherman could do this service in his own area. A few might be able to go further.

The question is, however, not just restricted to the pilotage proper. Firstly, one of the most contested areas of medieval law concerned the ownership of shipwreck. Church and crown had an obvious interest in the supervision of the routes from this point of view (cf. KLNM: *strandrätt*). Secondly, there are obvious signs of a consistent sailing mark system put up during the Middle Ages (remains of cairns and place names). This system was probably re-vived, not introduced, during the reign of Gustav Vasa (1521–60). Even if it is anachronistic to refer to the fact that pilots were responsible for this work in later times, it does not sound pre-posterous to suppose that the coastal population was instructed to work for the interests of society in this respect. In return they might have been accorded certain privileges, possibly even encouraged by these privileges to settle in the area chosen.

The supposition of Wirsén on pilotage from every mentioned site is on the other hand highly questionable, since nothing in the itinerary text indicates any relevant reference to such a system (the same idea is taken up by Cederlund 1989a etc.). But the division of the itinerary certainly does, even if it could only have meant a number of long-range Danish pilots travel-ling with the ships, who had specialized in certain stretches of the Swedish and Finnish coasts.
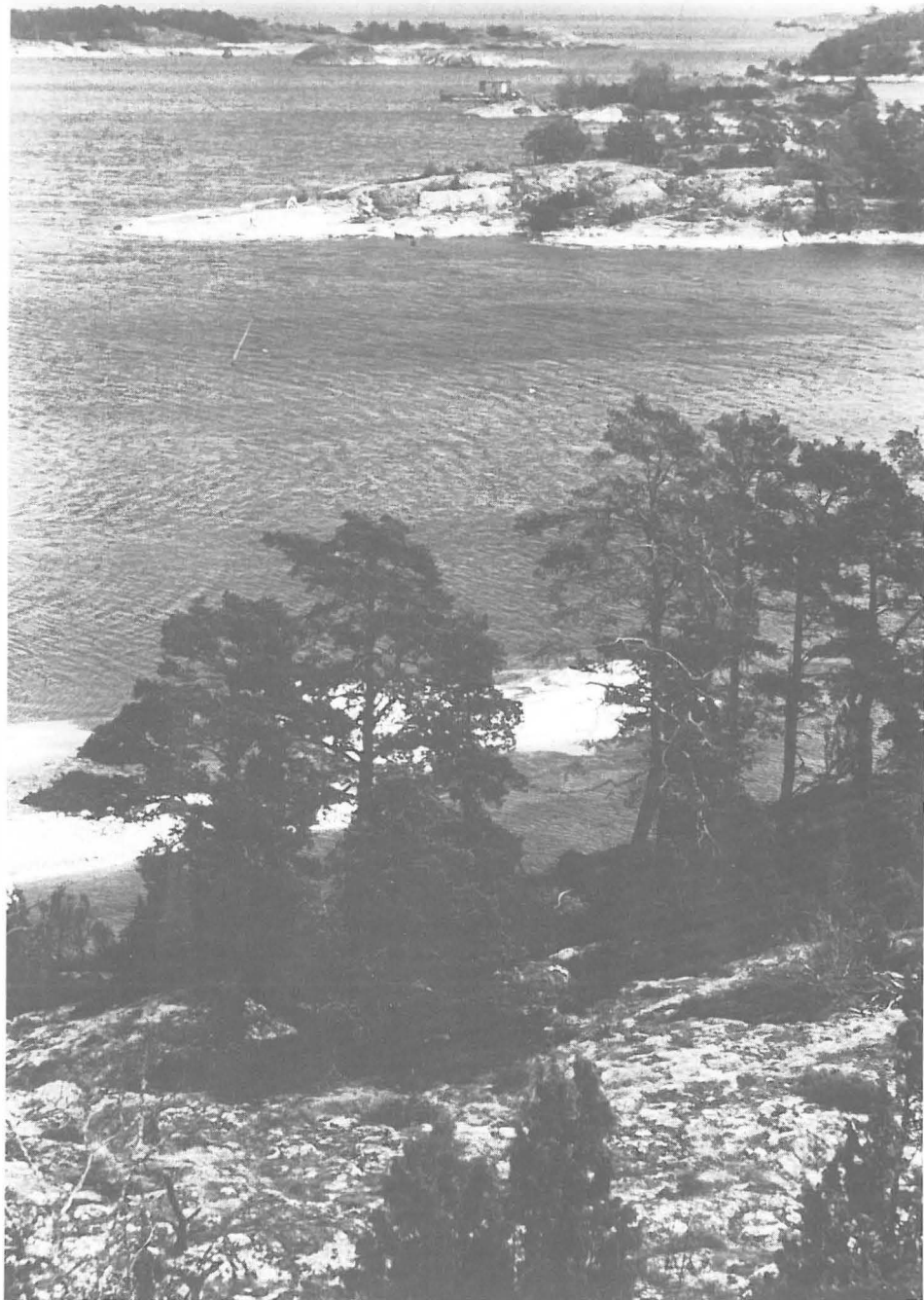
Fig. 17 *The itinerary route from land, where the wreck with the working name "Ringaren" was found and excavated in the 1970's. The diving barge is visible in the upper centre of the picture. Flat-varp, Småland, 1975.*

Fig. 18 *The bartmann jug recovered from the "Ringaren" wreck, approximately the first half of the 16th century. The face of the bearded man is a* janus *face with three aspects. Flatvarp, Småland, 1975.*

There is, however, nothing improbable in supposing an early medieval origin for coastal fishing settlements along this coastline (for forthcoming research on this complex in the province of Småland reference to Peter Norman, Riksantikvarieämbetet, Stockholm). On the other hand the only medieval de facto mention of pilots concerns the town laws (common ref. KLNM), such as the *bjärköarätt* (at least 12th century in Norway, the surviving Swedish manuscript from the middle of the 14th century, Schlyter 1844), the *Söderköping town law* (only preserved in fragments: Klemming 1867, possibly around 1280) and the so-called *maritime law of Visby* (Visby sjörätt, printed in Copenhagen in 1505, but probably established in the beginnings of the 14th century, Schlyter 1853).

The historical sources at our disposal do, however, no suffice to prove this hypothesis. Generally speaking, the most important obstacle is not this lack of sources, but rather an underlying feeling mainly based on the assumed omnipotence of linear evolution. This feeling can be questioned in many ways, particularly in central problems of economy and culture. But the implicit evolutionism has never been scrutinized in earnest in the case of conditions in shipping. Of course some vessels may have been smaller during the Middle Ages than their counterparts during the 17th or 18th centuries, but they were certainly not m u c h smaller. Maybe the comparative smallness even was compensated by a greater number? As to the need for pilots there is certainly no reason to believe that the Middle Ages were better off than any later time. As we can suppose from another angle of the evolutionary complex there must have been coastal sailing routes, since they have been used up to our own era. Accordingly, even without the Baltic itinerary of the Liber Census Daniae there is good reason to believe in a pilotage system, informal or not, along the inner routes and archipelagoes of Scandinavia. Why not assume that under the circumstances of great shipping, such as during the Viking Age

and the early Middle Age, we did really possess a regular pilot system, although organized in another way than later. The prerequisite of such a system would certainly be a strong kingship with its attendant, a strong levy fleet. It is, however, probable, that the settlement type of the later part of the 16th century, when we have plenty of evidence concerning regular pilotage (Wirsén 1968), did not exist during the beginnings of the Middle Ages (11th–13th century). A fully developed crown-organized pilot system took another 50 years from the 1590's. In Norrland the conditions of the 16th century still were valid before AD 1725. But does anything of this preclude the need and possibly quite informal existence of pilots? Does it even preclude a s y s t e m?

On what foundation could then an early pilot system be based? A working hypothesis would be a combination of several factors, including an important military aspect. Adolf Schück (1950) found a number of King's Harbours (Kungshamn, Konungshamn) at several of the sites mentioned in the itinerary of the east coast of Sweden. He imagines that a foreign ship was obliged to follow the approved sailing route (King's Route, above), corresponding to the *viae rectae* on land, and would be able to find a pilot in at least every *Konungshamn*. At the same time the Swedish king would be able to control these foreign ships by way of ledung (levy fleet) ships stationed along the route, possibly also lying in wait at the King's Harbour localities. Are the pilot stations identical with these sites? The hypothesis of Schück is founded on an interpretation of the ledung system as an organization of coastal defence, not primarily an attack fleet. This hypothesis is, however, not commonly accepted.

In Norway Roald Morcken (1978: 57) also assumed the existence of pilots alongside inns and stage points, i.e. a combined civilian and military function of the sailing route. Moreover he maintained that the uniform distance reckoning system (in *vikur*, above) helped in medieval fleet disposition, adding the unbroken sequence of beacons as a prerequisite for safe shipping as well as for strategic surveillance. At least on the surface exactly the same condition prevail at the Swedish east coast.

If we accept these hypotheses and combine their essence it is possible to ask: why not a military or naval *ledhsaga(re)*? The knowledge of the coast and its possible sailing passages partly ought to have been a guarded secret for military reasons. It is interesting, although hardly conclusive, that the medieval title *ledhsaga(re)* for a pilot (a "guide" in the general sense of the word, still the meaning of the word in Swedish) later is superseded by the old ledung (levy fleet) captain title *styroman* (styrman, at present meaning mate, earlier corresponding to *styrir* (SAOB, Hellberg 1978, 1979). A few observations on sites reasonably pertaining to the ledung system in Norrland may point in the same direction. At two sites with *Snäck*- names, *Snäckmor* of Njutånger parish (*sneckiemoor* in 1635, a unique instance where the record has preserved the unquestionably Nordic ship type term) and *Snäckli* of Norrala parish in Hälsingland it is possible to combine several source types in both history and archaelogy. The sites seem to have been fortified and well guarded. Moreover, a *Kettil styroman* of Njutånger is mentioned in a diploma in 1363 (Diplomatarium Suecanum no. 6772, Njutånger 19/2 1363). In the other case a Norrala mariner, (possibly the *styroman*) Johan Langer, was the captain of the ship of the archbishop Hemming Nilsson in AD 1346, when he travelled to the inner Bothnian to establish the border between the archdiocese and the diocese of Åbo (i.e. in reality between Sweden and Finland; Ahnlund 1920: 218).

In the immediate neighbourhood of these sites 17th century stage points are found (Hedin 1939), possibly reflecting medieval conditions. This would not be surprising, since the *skeppslag*, i.e. levy fleet districts, later tax districts, according to law were supposed to keep up the stage system for the crown. Later the same duty was imposed on the parishes (*socknar;* Friberg 1951 I: 336). Even the ship of the *skeppslag* might in due order have been replaced by the *socknaskepp*, the ship of the coastal parish. These parish ships were used for the public use of the

inhabitants in trade and possible tax transports. They could still certainly be put at the disposal of the crown during a war.

It could be assumed that the general change of meaning of the title *styr(o)man* occurred in the 15th century when the ledung system disappeared. Styroman is already in the 16th century synonymous with pilot, but the new term *lots* is also brought in at this time from German. The master pilot (1644) Johan Månsson, nicknamed "Styr-Jan", author of the famous guide of the Baltic, carried the title *styrman*. The pilot system, as it developed later, was militarily organized, but altogether of a different character than this former assumed system. From 1671 and up to present time the official title of a Swedish pilot is *lots*.

As to the spatial distribution of the pilot "stations" it must be pointed out that the system could have been intended for long-distance pilots, aged and well-experienced skippers, probably navy (levy fleet) men. They would mostly have been in the pay of convoys, either following the whole journey or specializing in parts of the official route. Some arguments for approximate distances have already been given.

In a more local sense, the system of pilotage could be based on the same places where you could hire a boat (the stage points), if you did not use the same boat all the way. The standard distance for such a local service would then be fairly short. To some extent this would only concern the local, inner routes, possibly intended for smaller vessels, which could be hauled across isthmuses, to avoid difficult passages in the open sea.

Several colonization processes took place in Swedish waters during the Middle Ages, in Norrland, Finland and Estonia. They were mostly maritime in character. It is reasonable to assume that his expansion established or even presupposed a demand for pilotage.

When considering the supposition that there may have existed a developed system of pilotage during the Middle Ages, there are thus a couple of relevant facts concerning the itinerary of the Land Register of King Valdemar Sejr which may reflect such a system.

Firstly:

1) By way of a careful analysis of the identified sites, it is obvious that the itinerary route consists of several more or less self-contained and overlapping sections of the sailing route or sequence.
2) Moreover, it can be deduced that these sections differ from each other; some contain distance measurements in *vikur*, some do not.
3) The route has got one goal except Reval (Tallinn): Stockholm. Here the route description starts anew, significantly enough with consistently erroneous distance measurements.

Secondly:

4) At parts of the route, especially in Finnish waters, the distances between the enumerated sites are much longer than otherwise.
5) Some localities are mentioned more often than others.
6) This could be explained most reasonably by presuming that the sailing route sequence had been put together from different fragments and originally recounted by pilots who were specialized precisely in those parts. The background of this process is, however, completely unknown. The pilots may have been professional Danish sailors, but there is also a strong case for local expertise along the coast. The sites of the medieval towns have – on the other hand – no relationship to these interruptions in the itinerary text. Accordingly, town pilots seem to be most improbable as the origin of the different route parts.

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