

Photograph by courtesy of Norwegian Information Service Lief Erikson discovers America. (Original painting hangs in Washington, D. C.)

Commentary

THE SOURCES OF THE VINLAND MAP1

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The discovery and publication of a new pre-Columbian map of the world, on which appears for the first and only time an outline of the Norsemen's Vinland, was one of the sensations of 1965. It was issued under the most impressive of auspices, in a handsome volume published by the Yale University Press, with contributions by outstanding scholars from the Yale University Library and the British Museum (Skelton, Marston and Painter 1965). Coming on the heels of announcements of the finding of Norse artifacts in the soil of North America by Helge Ingstad (1965), it stimulated a vigorous discussion by reviewers of the whole problem of the Norse exploration of the New World in the Middle Ages.

In spite of the eight years spent by the authors of The Vinland Map and the Tartar Relation and the searching analysis they have given to the manuscript and its contents, the main problem of how such a map could have been drawn in southern Europe in 1440 and why it should have been drawn at all is still unsolved. Unless other documents turn up which will throw light on its origin, we are obliged to judge it on its internal evidence and the way it fits into the known picture of the world at that period. The extreme secrecy in which the researches of Messrs. Skelton, Marston and Painter were conducted apparently prevented them from seeking the aid of other medievalists, even those whose competence could have been useful to them in relation to the Scandinavian sources (see Haugen 1966 for specific references). Fortunately, the exemplary edition they have provided and the wealth of data about medieval cartography make it possible to see where the problems are. It will be my purpose to pinpoint the problem in relation to the Old Icelandic sagas and annals, and to suggest a hypothesis concerning the possible mode of transmission of the information to the cartographer of the Vinland Map (hereafter VM) as well as a motive for its making. I suspect that only by further research along these lines will it be possible to make the map comprehensible and dispel the suspicion of forgery which has already been raised by some reviewers. For example, G. R. Crone (1966a), the English cartographer, denies that Greenland could have been so drawn in the Middle Ages; Eva Taylor expressed the same opinion in an unpublished paper reported in The Sunday Times (London, 6 March 1966, p. 13).

The question of authenticating a new and startling document of this kind is a troublesome one, as the authors of *The Vinland Map* know full well. The discovery of America is of such vital importance in world history and of such perennial interest to all Americans, that it has already spawned vast quantities of forgeries and unfounded speculation. For reasons that are never spelled out

¹The thesis of this article was presented briefly and without documentation in a review of The Vinland Map and the Tartar Relation, to be published in Speculum. The author has had useful discussion of its contents with Karl Ivar Hildeman and Michael Bell.

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in the book, but which must be connected with the huge commercial value of the VM, we are kept in the dark concerning the immediate history of the manuscript. But the authors have labored diligently on the identification of the hand and the materials of writing, and they have staked their scholarly reputation on the authenticity of the map. Only experts with intimate technical knowledge in the esoteric fields of paleography and paper manufacture can challenge their conclusions. I am therefore not disposed to question their accuracy or validity, but I take it as an assumption (which later information could invalidate) that the map we have was indeed made in or around the year 1440, and that it was made to accompany an otherwise unknown account by C. de Bridia of the John Carpini mission to the Mongols in 1245-47 (hereafter referred to as the Tartar Relation, or TR). Both of these were then attached to a manuscript of Vincent of Beauvais, Speculum Historiale.

This does not mean, of course, that the map we have is an original, and the authors (Skelton et al, 1965, p. 142) even suggest that it must be a copy and provide a brief hypothetical stemma. However, the evidence here is extremely slim, and I think we are on safer ground if we assume for the moment that we have the map exactly as it was originally made. Mr. Skelton's thorough documentation of the world map tradition of the fourteenth and fifteenth centuries makes it highly probable that he is right in suggesting that it is based on Bianco's atlas of 1436, through whatever intermediaries. A study of other works (Bagrow 1964; Nordenskiöld 1889; Nansen 1911) does not turn up any other maps that appear to be relevant. The appearance of Vinland on the 1475 map printed in the Rudimentum novitiorum (Lübeck), which can be seen in Bagrow (1964, p. 99) is generally taken to be an inaccurate spelling of Finland, as maintained by Fridtjof Nansen (1911, p. 32). Mr. Skelton also shows in some detail that the present map deviates from the 1436 model in two areas: the extreme northeast and the extreme northwest of Eurasia. The legends in the northeast can largely be explained by reference to the TR: however poorly, the map reflects some familiarity with the report on the dangerous religious and diplomatic mission of Franciscan Friar John Carpini on behalf of Pope Innocent IV (on pp. 246-47 Mr. Painter concludes that the maker of the VM knew no other account of this mission except TR). The logical inference one can draw from this is that the legends and outlines of the northwestern areas should also be explained by a written source which was accessible to the maker of the VM. This inference is discussed by the authors (pp. 144, 250), who attribute the original suggestion to Mr. Witten, the bookdealer who found the VM. It is this inferential source that is our chief interest here: who wrote it, and why, and what did it contain? On this point there is some discussion by our authors, with rather differing conclusions, and without their arriving at the hypothesis which seems to me to be the only reasonable conclusion on the basis of the evidence before us.

R. A. Skelton believes that the VM must be based on an earlier map drawn from experience of Greenland and Vinland, "a map, like other graphic records, cannot be substantially communicated by word of mouth" (p. 209). He suggests that there must have been a cartographic model, probably drawn in Iceland, and (surprisingly after his previous statement) "compiled from the saga accounts or from hearsay, and generalized in transmission" (p. 217). But he dismisses the likelihood that this was the model for those later maps drawn after Columbus, by people like the Icelandic Sigurdur Stefánsson (c. 1590) or the Danish Bishop Hans Poulson Resen (1605), from Icelandic sources. Bishop Resen specifically

said that he followed an Icelandic map which was "several centuries old," and I can see no very strong reason for doubting his word. On Skelton's theory, we are then to suppose that two separate maps were drawn in Iceland, independently derived from either the written saga accounts or a corresponding oral tradition. Mr. Painter (p. 254), on the other hand, tries to conflate these maps into a single Icelandic original, which, he writes, "is nothing more nor less than an attempt to draw, from a minimal knowledge of the saga story, the landfalls of Helluland, Markland, and Vinland, including, as it seems, Keelness; but it manifestly bears no cartographic link with real experience."

The point on which both of these conflicting theories founder is the extremely accurate reflection of the shape of Greenland, as we know it today. As the authors themselves show, on the VM this is closer to the actual facts than any other map prior to the nineteenth century. The precision with which this country is rendered has in fact been made the basis of attacks on the authenticity of the map itself: it is simply too good, writes G. R. Crone (1966b), in his hostile review. The authors of The Vinland Map spend a great many pages trying to justify it (especially pp. 182-99); Mr. Skelton (p. 197) admits that it is this feature which most strongly "might suggest - were the converging evidence to the contrary less strong — the work of a counterfeiter." They dredge up the old theory about a milder climate which might have permitted the circumnavigation of Greenland in the Middle Ages; but authorities are agreed that it is most unlikely that this was possible. Nevertheless, Mr. Skelton (p. 189) is probably right in saying that the design for Greenland "could have been — indeed must have been - derived, if perhaps at more than one remove, from information gathered by the Norse settlers who frequented these coasts." If the map of Greenland is drawn from experience, and if the Greenlanders got to Vinland, as we know they did, why is there such an enormous discrepancy in the accuracy of the representations of Greenland and Vinland?

The authors here make the common error of confounding Icelanders and Greenlanders, naming them in the same breath, or covering both under the term "Norsemen." It appears to me that the explanation of the accuracy of Greenland and the somewhat misty (though better than the authors think) contours of Vinland is to be found in the existence of a distinct Greenlandic tradition which did not come to Iceland or by way of Iceland, and which in this case remained entirely unaffected by the Icelandic accounts as we have them. There is no doubt that there was much contact between Greenland and Iceland throughout this period, but it must not be forgotten that they were independent commonwealths (the nationalistic argument as to whether Eric the Red and Leif Ericson were Norwegians or Icelanders is manifestly absurd: they were Greenlanders). The Greenland settlements ran as high as 3000 persons, with a dozen or more churches, and a trade which was more with Norway and other continental countries than with Iceland. The church of Greenland had its own bishop, who was not subject to the Icelandic bishops, but under the archbishopric of Hamburg and later of Trondheim. We know that there was a literary tradition in Greenland, reflected in at least one of the lays of the Elder Edda, and in a number of runic inscriptions. The Icelandic accounts of the Vinland voyages claim to go back to the Icelandic merchant Thorfinn Karlsefni, who returned to Iceland after trying to settle in Vinland, and from whom an illustrious family was descended. Ari's account in Islendingabók goes back to one of his ancestors who had been in Greenland.

Yet the information on the VM can be shown to be almost independent of these Icelandic reports on Greenland. Let us take up one by one the items of information provided by the VM and see how it agrees with Icelandic sources.

Iceland herself is not portrayed in any strikingly original or correct way, much less the Scandinavian peninsula, which is badly distorted in ways that are common in medieval maps. If an Icelander or an Icelandic map were the source, he (or it) would surely have been able to provide information about his own island which was comparable in quality to that about Greenland.

Greenland is drawn in a way that can only go back to personal experience of the island, and that in turn was available only to those who lived there and who by necessity became acquainted with its long coasts in order to survive. That they did have such knowledge is adequately demonstrated in The Vinland Map (p. 189) and need not be elaborated upon here. The only difficult point is the northern coast of Greenland: even though they hardly can have circumnavigated it, there is nothing to prevent their having explored it on foot after reaching some of the high arctic latitudes which we know they did explore. Even if this should prove to have been impossible, anyone knowing the general shape of the east and west coasts could extrapolate the northern one, if he operated on the theory that beyond the uttermost land there was water.

The important point is that every Icelandic map drawn is based on the erroneous notion that Greenland is a peninsula, and that Greenland, together with the Vinland regions, encloses the North Atlantic. The VM is based on the opposite and correct assumption that Greenland is an island and hence surrounded by sea. A mere look at Resen's, Sigurdsson's and all other maps drawn from Icelandic sources shows that these were not based on first-hand experience, but on learned construction and the reading of the sages. The same is of course true of the information furnished European cartographers by the Danish adventurer and manifest liar Claudius Clavus, as shown by Fridtjof Nansen (1911, Vol. II, 248-77) and others (see Björnbo and Petersen 1909; Skelton et al. 1965, passim). An unconvincing attempt to attribute the VM to Clavus is made by Ib Rønne Kejlbo (1966); the differences between Clavus' Greenland and that of the VM are too great for them to have a common source. The newly discovered Hungarian map which is presented by Helge Ingstad (1965, pp. 88-89) does make Greenland an island, but the whole map is clearly nothing but a copy of Sigurdur Stefánsson's map in which the author mechanically unhinged Greenland from its attachment to "Riseland." (See also Thrap 1928.)

The legends on the map concerning the discovery of Vinland are markedly at variance with the Icelandic traditions. On Vinland we read: Vinlanda Insula a Byarno reperta et leipho socijs "The Island of Vinland discovered by Bjarni and Leif together" (Latin abbreviations have here been expanded from the reading in The Vinland Map, p. 139). In the long caption in the northwest corner of the map above Greenland and Vinland, we read: Volente deo post longum iter ab insula Gronelanda per meridiem ad reliquas extremas partes occidentalis oceani maris iter facientes ad austrum inter glacies byarnus et leiphus erissonius socii terram nouam uterrimam videlicet viniferam inuenerunt quam Vinilandam insulam appellauerunt "By God's will, after a long voyage from the island of Greenland to the south toward the most distant remaining parts of the western ocean sea, sailing southward amidst the ice, the companions Bjarni and Leif Ericson discovered a new land, extremely fertile and even having vines, the which island they named Vinland." As is well known, the Icelandic sources have

two canonical versions: (a) Bjarni sighted Vinland, Leif explored it; (b) Leif sighted and explored it. The informant of the VM has a third version: Bjarni and Leif both sighted and explored it, apparently together. Recent writers on the subject of the Vinland Sagas have for some time been in agreement on the superiority of version (a), but there has always been a difficulty in it: why should Bjarni not have explored the coast he sighted, and why did Leif wait fifteen years before he explored it? The third version is inherently more likely, but in any case it clearly represents an independent tradition which did not reach Iceland or at least did not get written down there. It is easy to suppose that this could have been current in Greenland; the fact that there is no reference to Thorfinn Karlsefni also hints that the information came from Greenlandic and not Icelandic sources. His progeny was of no importance in Greenland.

The central piece of information after the discovery relates to Eric Gnupson, who is barely mentioned in the Icelandic annals under the year 1121: Eirikr byskup af Groenlandi fór at leita Vínlands "Bishop Eric of Greenland went to look for Vinland" (Jónsson 1953, p. 13). This is from the Logmannsannall; in the manuscript called Konungsannall (Jónsson 1953, pp. 82 and 83), the event is listed twice: 1112 Ferd Eiriks byskups; 1121 Eirikr byskup ufsi leitadi Vinlands. According to this edition none of the annals is older than 1250, and the second of these is from the fourteenth century.

As Gwyn Jones recently wrote (1964, p. 96): "To what end [Eric went to Vinland or with what success we do not know." If the VM proves to be authentic, we now know both. This legend is important enough to be reproduced here in full: Henricus Gronelande regionumque finitimarum sedis apostolicae episcopus legatus in hac terra spaciosa vero et opulentissima in postremo anno pontificis (or patris) sanctissimi nostri Pascali accessit in nomine dei omnipotentis longo tempore mansit estiuo et brumali postea versus Gronelandam redit ad orientem hiemalem deinde humillima obediencia superiori voluntati processit "Henry [i.e. Eric], legate of the Apostolic See and bishop of Greenland and the neighboring regions, arrived in this truly vast and very rich land, in the name of Almighty God, in the last year of our most blessed father Paschal, remained a long time in both summer and winter, and later returned northeastward toward Greenland and then proceeded in most humble obedience to the will of his superiors." (Some minor errors in the reading of the legend (Skelton p. 140), which is reproduced in magnified form on plate IV, have here been corrected and the abbreviations have been expanded.) After the word "proceeded" the authors have inserted [i.e. home to Europe?], which begs a question that is here of the highest importance.

The fact is that on the VM Bishop Eric emerges as the Norse counterpart to Father Carpini. The whole arrangement of the VM is geared to the interests of the papacy. It is not a chart to sail by, but a record of information which was centered on the Pope's interest in maintaining diplomatic contact with the farthest corners of the world. Here the Icelandic sources again fail us in any attempt to explain the map. In the annals he is called "bishop of the Greenlanders" (or of Greenland, in another manuscript), although it is well known that the first bishop of Greenland was Arnald, who was consecrated in 1124. Gwyn Jones (1064, p. 96 n.) hazards the guess: "Was Eirik a bishop in partibus infidelium, sent to convert the Skraelings?" The answer is again clear: he was an episcopus legatus, a legate bishop, sent out by the Pope to investigate the Church in Greenland, perhaps at the request of the clergy in Greenland who wanted

their own bishop after a century of Christian teaching, and to explore neighboring countries, especially Vinland, of which the Church had information, as we know from Adam of Bremen's History of the Archbishops of Bremen. The hypothesis advanced by Mr. Painter (p. 256 ff.) that there were extensive settlements of Norsemen in Vinland is not necessary or even probable. The mere fact that the country existed was sufficient reason to have the legate go there and take a look; the legend on the map does not suggest that he found people, only a "truly vast and very rich land."

There is a further discrepancy between the Annals and the VM in their dates, the former having 1121, the latter 1117 (the last year of Pope Paschal II's life). As noted above, the Icelandic annals were composed long after the events, and we need not take their dates too seriously. The method of dating used on the VM is far more convincingly authentic, tied as it was to the very purpose of Bishop Eric's mission.

It is no coincidence that the VM mentions two popes in its extensive legends, one in the Northeast and one in the Northwest. This symmetrical structure can only be accounted for by supposing that the map was drawn in and for the papal secretariat. Eric Gnupson fared to the westernmost bounds of the known earth in 1117 and John Carpini to the easternmost bounds in 1245, both at the behest of the popes of their day. The Carpini mission reported back to the Pope, and it is highly probable that the Eric Gnupson mission did likewise. In fact, the final words of the legend about him can hardly mean anything else. First he returned to his post in Greenland, and then he "proceeded in most humble obedience to the will of his superiors." His immediate superior was the Pope, albeit a different one from the one who had sent him. He had no reason to go to Iceland, or to Norway, or even to Denmark, for the ecclesiastical authorities in these countries had not authorized his mission: he was sent by the highest authority of the Church, and would naturally report back to it.

As a further confirmation comes the fact that the VM has been localized to the Upper Rhine region around 1440, when a church council was in session nearby, first in Basel from 1431, later in Florence, where some of the best mapmakers in Europe were to be found. The authors of The Vinland Map have overlooked the move from Basel to Florence, which proved to be a more important council and more accessible to mapmaking; this suggestion I owe to Professor Francis M. Rogers, whose book The Quest for Eastern Christians (1962) gives some account of the Council of Florence. That the papacy was concerned about Greenland in this century of challenge by Islam is apparent from two papal letters issued in 1448 by Pope Nicolas V and at an unknown date by Pope Alexander VI, who became pope in 1492 (The Flatey Book . . . 1906, pp. 163-76). The papal archives on Greenland may well have contained further information, perhaps a map, perhaps a "Greenland Relation," which were accessible to the mapmaker along with the TR and the Bianco (or related) world map.

Whatever form it may have had in 1440, this relation (and/or map) can only have gone back to Eric Gnupson himself or someone in his company. We can imagine several possibilities: Eric dictated to a papal scribe, who set it forth in Latin prose; or Eric had a map with him, drawn on the spot, and a written account which he had composed in Greenland.

There is one set of peculiarities of the VM which is not commented on in The Vinland Map. These are the forms of the Latinized names. The Scandinavians had a firm tradition of Latinization, which included the use of -ia for

the names of countries: Svecia for Sweden, Norvegia for Norway, Islandia for Iceland, and Gronlandia for Greenland. These are the forms found, for example, on Claudius Clavus' 1467 map (Nansen 1911, II: 251). In non-Scandinavian sources one also finds -a, e.g. Irlanda for Ireland as on the Bianco atlas of 1436, (Nansen, II: 267), and this is the form adopted throughout on the VM: Gronelanda for Greenland, Vinlanda for Vinland. Then there is the peculiar Latinization of Leif Ericsson (Old Norse Leifr Eiriksson) as Leiphus Erissonius and of Eric (Old Norse Eirikr) as Henricus; in Scandinavian sources the name Eirikr would usually have become Ericus and the patronymic Eiriksson Erici. Only a non-Scandinavian, who did not understand the meaning of the patronymic, could have Latinized it in this way. In general, the Latinizations confirm the probability that the account of Eric Gnupson's voyage was reported on in Rome and taken down by a scribe who did not understand Old Norse.

We are now ready to consider once more the shape of Vinland on the VM in the light of our hypothesis that the information comes from a Greenlander, either Eric Gnupson himself or one of his Greenlandic informants. It is clear that the west side of Vinland is purely hypothetical, being a wiggly line such as mapmakers used to enclose areas they knew nothing about. But the east side of Vinland is much more detailed, and has a character which agrees in remarkable ways with the coast opposite Greenland. We cannot question the fact that Greenlanders got to the North American coast; although the information is sparse, it is clear and unambiguous. It is reasonable to suppose that they got to those parts of it that lay nearest them, i.e. opposite the Greenland coast. Amid all the arguments about the location of Vinland, no one can doubt that some of the lands seen must have been across the Davis Strait. Along this coast which runs parallel to that of Greenland and somewhat to the south, both in reality and on the VM, there are two major inlets: Hudson Strait and Strait of Belle Isle, separating Baffinland from Labrador and Labrador from Newfoundland, or possibly Hamilton Inlet instead of Hudson Strait (Vilmundarson 1966). The proportions are bad, the location is not quite what a modern mapmaker would have accepted, but the information is correct. These are not necessarily the three lands of Helluland, Markland, and Vinland, drawn from imagination by readers of the sagas, as many critics seem to think. They can just as well be based on the same kind of sailors' reports, or even charts, as must be at the base of the Greenland of the VM. Nor need we suppose that Vinland was limited to this area, although it was the one most accessible to the Greenlanders. While the VM seems to confirm Ingstad's discoveries in Newfoundland, it does not exclude the possibility that the Greenlanders reached much farther south, say into New England. As Gwyn Jones has noted, there is reason, on the basis of the sagas, to suppose that there were two Vinlands, a more southerly and a more northerly one. But on the VM there is no clear trace of the southerly one. Nor is there, as Mr. Painter imaginatively thinks (p. 253), any similarity to the map of Sigurdur Stefánsson and company. And contrary to the Icelandic tradition, the whole area is labeled Vinland.

The central role played by Bishop Eric Gnupson, nicknamed Upsi (coal fish), in originating the VM whets our appetite to know more about him. As shown by the authors of the book (especially pp. 223-26), there are tantalizing allusions to him in various sources: in the Icelandic Landnámabók he is said to be a descendant in the fifth generation of one of Iceland's first settlers; the Annals refer to an undefined "voyage" of his in the year 1112 or 1113, which could be

the dates of his original departure for Greenland. This would have given him ample time to acquire that intimate knowledge of the country which is reflected on the VM. A Danish clergyman writing in 1608 attributed the founding of a colony and the Christian faith in Vinland to Bishop Eric. Most mysteriously of all, a Catholic scholar (Luka Jelič) attributed to him the identical title that he is given on the VM and suggested, without revealing his sources, that Eric may have died in Vinland about 1122. The VM has now revealed that this is not true, and we are free to suppose that he or one of his men made his way back to Rome to report to his superiors.

We are now ready to sum up our findings. I would like to suggest that the VM was drawn at or near the Council of Florence about 1440 by a mapmaker who had access to papal archives which included the Tartar Relation and a (hypothetical) Greenland Relation. He probably did so at the behest of the Pope himself, who was interested in playing a role comparable to those of Paschal, who in 1117 sent Eric Gnupson from Greenland and nearby territories ad reliquas extremas partes occidentalis oceani maris, to pave the way for a Greenlandic bishopric, and of Innocent IV who, in 1245, sent John Carpini to Mongolia per totum occidentem et in reliqua parte usque ad mare oceanum orientale. The map and the TR survived by being bound up with a copy of Vincent of Beauvais, to which they bear only a remote relationship; for all we know, the supposed Greenland Relation may have been bound up with it too, and later lost. In any case, the VM was a one-time job, never repeated and as far as can now be seen, without further influence on cartography or exploration. It may have been part of the secret archives of the papacy. The information it gives us is based on the report, whether in oral, written, or cartographic form, of Eric himself or one of his men, and stems directly from Greenland rather than by way of Iceland. It therefore differs on practically every point from the Icelandic sources, partly because these were farther away from Greenland, partly because the VM information may have been distorted by the papal scribe who took it down.

References

Bagrow, Leo. History of Cartography. rev. and enlarged by R. A. Skelton 1964, Cambridge: Harvard University Press. 312 pp.

Björnbo, A. A. and Carl S. Petersen. 1909. Der Däne Claudius Clausson Swart. Innsbruck: Wagner. 266 pp.

Crone, G. R. 1966a. How authentic is the "Vinland" map? Encounter, February 1966, pp. 75-78.

The Flatey Book and Recently Discovered Vatican Manuscripts Concerning America as Early as the Tenth Century. Norroena Society, 1906. 176 pp.

Haugen, Einar. 1966. Review of The Vinland Map and the Tartar Relation. Speculum (in press).

Ingstad, Helge. 1965. Vesterveg til Vinland. Oslo: Gyldendal Norsk Forlag. 284 pp. (This narrative account of the discoveries is in process of translation; the definitive scientific account is still in preparation. For references to popular accounts in English see Skelton et al. 1965, pp. 220, n. 256; 240; and 257, n. 38).

Jones, Gwyn. 1964. The Norse Atlantic Saga. London: Oxford University Press. 246 pp.

- Jónsson, Gudni. Annálar og Nafnaskrá. ed. 1953. Reykjavik: Islendingasagnaútgáfan. 344 pp.
 Kejlbo, Ib Rønne. 1966. Claudius Clavus and the Vinland Map. American-Scandinavian Review, LIV: 126-31.
- Nansen, Fridtjof. 1911. In Northern Mists. (2 vols.). New York: Frederick Stokes and Company. Vol. II, 420 pp.
- Nordenskiöld, A. E. 1889. Facsimile-atlas to the Early History of Cartography. Stockholm. New York: Kraus. 141 pp.
- Rogers, Francis M. 1962. The Quest for Eastern Christians. Minneapolis: University of Minnesota Press. 221 pp.
- Skelton, R. A., Thomas E. Marston, and George D. Painter. 1965. The Vinland Map and the Tartar Relation. New Haven and London: Yale University Press. 291 pp.
- Thrap, F. H. 1928. The Cartography of Greenland. Greenland (Copenhagen: Reitzel, London: Humphrey Milford), pp. 137-79.
- Vilmundarson, Thórhallur. 1966. Reflections on the Vinland map. American-Scandinavian Review, 54: 20-25.