Validating the 1673 “Marquette Map”

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In the summer of 1674 Louis Jolliet was nearing the end of an expedition that had taken him, Jesuit priest Jacques Marquette, and others from Lake Michigan down the Mississippi to the mouth of the Arkansas River and back by way of the Illinois River to Chicago. Proceeding on to Québec, the party left an ailing Marquette at Green Bay. He died in May 1675, and his papers—maps, journals, and reports—made their way to authorities in Québec. Jolliet’s papers, however, were lost on July 21, 1674, when his canoe capsized outside of Montréal. Briefly, that is the generally accepted story of the provenance of the expedition’s papers.

Some, however, over the past one hundred years have argued that Marquette’s papers were forged, probably by other Jesuits, in an attempt to enhance Marquette’s role in the expedition. More recently, others have attempted to discredit a map, claiming, among other charges, that Marquette lacked the cartographic skill to render it. What are we to make of the charges?

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Historians writing in the mid-nineteenth century knew well the impact of the French on America's exploration and development. An important part of that history was the process by which the early French settlement on the Saint Lawrence River had expanded westward, eventually into the area of the Great Lakes and Mississippi River Valley. During the seventeenth century the Catholic order of Jesuits was particularly prominent in that process.

The Jesuits, founded in 1540, were known as an intellectual, highly centralized order, and they naturally generated huge quantities of paper recording their activities in Canada. It was a principle of the order that there should be yearly assessments of the work of each “province.” For the North American area, beginning in 1632, that provision was met by the production of manuscript “Relations,” compiled by the superior for the province. These Relations were then generally printed and published, for they served not only as an internal check on the missionary work at hand but also as powerful propaganda to generate support in the society at large. The Relations for North America were therefore published in French and widely disseminated in France.

The set of North American Relations continued from 1632 until the report for 1671–1672, after which internal difficulties led to a hiatus in their publication. However, the gap was filled by a sort of historical accident. Claude Dablon, the Jesuit superior in North America since 1670, had in fact gathered together papers for the 1672–1673 Relation, but he had retained some of them in Québec. When the Jesuits were expelled from Canada (and other parts of the world) by the British in the 1770s, those papers were left in the hands of a remaining Jesuit, who deposited them with the nuns of the Hôtel-Dieu in Québec in 1800. The nuns looked after the documents and returned them to the Jesuits when the latter returned to Canada in the 1840s.

As the papers covered a decade that was otherwise rather lacking in documentary evidence, historians soon incorporated them into their accounts of Jesuit activity in the Great Lakes during the seventeenth century. In particular, the papers described the expedition led by Louis Jolliet and Father Jacques Marquette down the Mississippi River from Lake Michigan. Leaving Saint Ignace (Mackinac Strait) in May 1673, they were described as passing through the Fox and Wisconsin rivers into the Mississippi River, and then paddling down it until they neared the mouth of the Arkansas River. They then turned back, returning by the Illinois River and reaching Chicago in late August. By October 1673 they had reached

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2 Most of those documents are still to be found at the Archivum Romanum Societatis Jesu in Rome.
Green Bay—Marquette remained there while Jolliet continued to Sault Sainte Marie. From there he continued the next spring on the way to Montréal, but on July 21 his canoe overturned just short of the city, and all his papers were lost. Jolliet barely escaped with his life.

Meanwhile Marquette, who had been ill, spent a year at Green Bay before wintering at Chicago on his way to minister to tribes on the Illinois River. Somewhat recovered, he went to Kaskaskia in March 1675, but again falling ill had to give up his mission. He was returning to Saint Ignace when he died on the eastern shore of Lake Michigan in May 1675. His papers were retrieved by his followers and taken back to Québec. In the last year of the eighteenth century Reuben Gold Thwaites published the papers in seventy-three volumes in both French and English. Often referred to as the Jesuit Relations, the full title of the series is The Jesuit Relations and Allied Documents, and they do indeed contain many such documents apart from the Relations, with details of where the original documents are to be found.

The general agreement among historians about the 1673 expedition began to be upset in the 1920s, when the Franciscan father Francis Borgia Steck of Quincy College began a series of publications tending to show that the documents retrieved from the nuns in 1844 were hoaxes. Beginning from the observation that superiors like Dablon generally compressed and sometimes elided the reports coming in from their missionaries, Steck became convinced not only that Dablon was guilty of tampering with the evidence so as to enhance the role of Marquette, but also that Father Felix Martin, of the returning Jesuits in the 1840s, had in fact forged five of the documents in question. Steck seriously questioned whether Marquette had in fact participated in the expedition. The five documents at issue were:

1. An account of the 1673 voyage ("Le premier voyage qu’a fait le père Marquette")
2. An account of Marquette’s journey in 1674–1675 ("La mission des Illinois fut establie")
3. An account of the work of Père Allouez in 1676 ("Pendant que je me préparois pour mon départ")
4. Marquette’s unfinished holograph journal ("ayant esté contraint de demeurer")
5. Marquette’s autograph map


Steck’s first publication was The Jolliet–Marquette Expedition, 1673 (Quincy, Ill.: Franciscan Fathers, 1928); his last book was Marquette Legends, ed. August Reyling (New York: Pageant Press, 1960). The documents in question may be found at the Archives des Jésuites au Canada, Montréal H2P1S6.
In *Marquette Legends* Steck printed a very useful chronological table of documents, drawn from Thwaites’s *Jesuit Relations* and elsewhere, that allows us to follow the progress of his argument. It has to be said that the documents do not convince the reader of Marquette’s absence from the 1673 expedition. On the contrary, from 1670 or so onward we read in numerous documents of Marquette’s desire to take part in an expedition to the “Mer du Sud” (Gulf of Mexico) and of his connection with Jolliet. That southerly venture had counterpart expeditions north toward Hudson Bay: Dablon thought of them as “spreading the Gospel to both ends of this America,” though there were other more worldly motives.

Apart from arguments about the nature of their contents, there is an absolutely fatal flaw in the claim that the “three accounts” are nineteenth-century forgeries. Steck may not have known when he began his work in the late 1920s that the Jesuit Archives in Paris contain almost identical counterparts to the accounts, and the Paris documents have certainly been in the *fonds Brotier*, as it is called, since the seventeenth century.7 The two sets of documents correspond like this:

1. Archives des Jésuites au Canada, Montréal, 296, pp. 1–37
   Archives de la province de France, Paris, *fonds Brotier* 159 13r-26v
2. Archives des Jésuites au Canada, Montréal, 296, pp. 37–51
   Archives de la province de France, Paris, *fonds Brotier* 159 26v-31
3. Archives des Jésuites au Canada, Montréal, 296, pp. 52–60

In addition, the Canadian and the French documents are written on identical paper, of the same size, and with the same range of watermarks.8 There seems no reason to doubt that the Montréal documents 1, 2, and 3 in fact date from the 1670s, when they were compiled by the Jesuit fathers and then happily saved from destruction by the care of the sisters of the Hôtel-Dieu. Documents 4 and 5 do not have exact counterparts in Paris and so cannot so easily be shown to be genuine. Leaving aside document 4, which is not relevant to our present purpose; we shall proceed on to consider document 5, the “Marquette Map.”

Steck was not sure what to make of the map, which he never saw (see Image 1, opposite page). Since it was part of the papers “recovered” in the 1840s he was naturally suspicious of it, writing at one point that it had been “traced” by Father

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7The *fonds Brotier*, containing material received from the foreign missions over the centuries, is found in the Archives de la Province de France . . . 92170 Vanves, France.
Felix Martin, and at another that Martin had “drawn” it. To those suspicions have more recently been added Carl Weber's claims that the map is a forgery—created in the 1840s—because:

1. Marquette is not known to have received any formal training as a cartographer.
2. Marquette is not known to have constructed any other map.
3. The map is too accurate for its time.
4. The map contains the place-name “Conception,” thus pandering to the nineteenth-century Catholic concern with the Immaculate Conception of the Virgin Mary.

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9 Stock, *Marquette Legends*, 192, 244.
Upon reflection, it will be seen that none of those points is valid. It may be true that Marquette did not receive formal training as a cartographer, but, like his colleagues, he had passed through the standard Jesuit intellectual training, which placed a considerable emphasis upon mathematics and its applications. The consequence was that when those Jesuits went out into the world, often to serve at remote missions, they seem very often to have been capable of producing maps of the areas. Their work in the Americas is summarized in “Jesuit Cartography in Central and South America,” which largely relies on the numerous examples cited by Ernest J. Burrus and Guillermo Fúrcora Cárdenas. There are literally hundreds of examples, sometimes relatively crude but sometimes reaching high levels of sophistication. Of course, the Jesuits were similarly active in other parts of the world, particularly in China, where the cartographic work of Father Matteo Ricci recently has been extensively studied.

A fine example of the work of those apparently un instructed Jesuits comes from the Great Lakes in the period just before the Jolliet-Marquette expedition. Here the Jesuit Relation of 1670-1671 contains a strikingly good depiction of Lake Superior (see Image 2, opposite page).15 Indeed, competent authorities assert that the map's cartographic detail would not be exceeded for many years. As Louis C. Karpinski put it: "No one can examine this fine delineation of Lake Superior and the northern parts of Michigan and Huron without amazement at the amount of scientific exploration and careful observation which made it possible."16 In the Relation of 1670-1671, Claude Dablon claims that the map was the work of "two Fathers of considerable intelligence," one of whom was likely Claude Allouez while the other may well have been Marquette.17 The map was constructed using a compass for direction and a quadrant or astrolabe for measuring the declination of heavenly bodies; it generally locates places, probably because of instrument error, only about a degree further south than the true figure.18 Clearly some of the seventeenth-century Jesuits of the Great Lakes were incomparable mapmakers. Did Marquette make other maps? Perhaps.

What about the argument that the Marquette Map is too accurate for its time, particularly in its delineation of part of the Illinois River? The map is indeed accurate, like its predecessor for Lake Superior. If a specific example of that accuracy were to be chosen, the best one would be the due southerly course of the Illinois River for a hundred miles or so before it joins the Mississippi River (see Image 3, Number 1, page 268). After Marquette's version, the feature was lost by most subsequent mapmakers, who often showed the Illinois River entering the Mississippi River on a west-south-westerly course (see Image 4, page 269). It was not until the early nineteenth century that the river's course was again correctly plotted, first by René Paul in 1815, then by Major Stephen Long in 1816 and John Melish in 1816. Melish's version was startlingly close to that of Marquette (See Image 5, page 270). But that was not because the Marquette Map was a nineteenth-century fake, but rather because in the days of the General Land Office surveyors, the river could again be as accurately plotted as it had been when Marquette paddled up it, taking observations as he and Jolliet went. Marquette's successors in cartography were generally what the French call "cartographes de cabinet," or "armchair cartographers." Small wonder that they lost the original precision.

15Its full title is Relation de ce qui s'est passé . . . en la Nouvelle France, les années 1670 & 1671. See Thwaites, Jesuit Relations, 55:7, 55:opp. 94.
17Thwaites, Jesuit Relations, 54:255.
So what of Marquette's calling part of the Mississippi River the "R. de la Conception" (See image 3, Number 2, above)? It is true that this dogma much preoccupied the Catholic church during the nineteenth century, but it is also true that Marquette had been obsessed—perhaps it is not too strong a term—from boyhood by the need to recognize the importance of the Virgin Mary, to whom indeed he committed the success of his daring venture. Nothing is surprising, then, in his use of the term for part of the great river.

In short, the reasons brought forward for considering the map a hoax are not very convincing. The Jesuits of the time were highly competent cartographers, and the Marquette Map is in fact even more accurate than Weber claims. However,

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that does not dismiss the need for a close analysis of the work, which indeed at first view is not very impressive, particularly when compared to much more elegant productions, often from the hand of Jean-Baptiste Louis Franquelin. Indeed, the Marquette Map has been well described as “barebones,” and it is; some historians think that a more elegant version was lost when Jolliet's canoe capsized.

The map at issue is approximately 13 7/8 by 19 inches (35 x 48 cm). Those measurements can only be approximate because the paper does not have perfectly straight edges. In its measurements and texture it closely resembles the paper composing the other previously mentioned four documents in the Montréal archives, though they have been folded in half, to make pages convenient for writing text. Thus, each page of the account of the 1673 voyage, for instance, measures roughly 9 1/2 by 13 1/4 inches (26 x 33.6 cm), and the other documents are of a similar size; all are on age-toned rag paper.
Many pages in the four documents have a range of distinctive watermarks, sometimes a griffin, sometimes the letters “ASM,” and sometimes a griffin with a coat-of-arms. It is likely that the paper of the map also contains one of those watermarks, but that cannot at the moment be checked because the document is mounted in a permanent frame. It will be noticed that the map has been folded, probably in the course of its transmission from Lake Michigan back to the Jesuit headquarters in Québec.

We have not been able to find the report of the framer who did this work.
The ink has not been analyzed, but it appears to be similar to the ink on the other documents. Most of the tribal and other names are in capitals, but the few examples of cursive writing appear to be in Marquette’s very distinctive hand. It may be that Marquette reserved use of the cursive for themes known to him before the voyage, using capitals for newly discovered features. In short, nothing about the map’s physical characteristics suggests that it is a nineteenth-century fake; on the contrary, it seems to share many of the characteristics as the material in the other four documents, three of which have been shown to be undoubtedly genuine because of their Paris counterparts.

Many scholars have been struck by the accuracy of the Marquette Map—the first European delineation of the southern part of Lake Michigan and of the central section of the Mississippi River. As Michael McCafferty put it: “The Marquette map is an exquisite piece of early cartography in that it is a statement of bare facts. It shows only what the explorer saw or already knew. It even marks with minute horizontal lines the location of rapids in the Mississippi River.”

Indeed, as we have seen, its very accuracy has led some to question its authenticity. However, it is possible—in the same way as in the case of documents 1, 2, and 3—to show that a document with the same striking features was sent to France in the seventeenth century, thus negating any argument that the map was a nineteenth-century forgery.

That map can be found in the Service Historique de la Défense at Vincennes, France, outside Paris, among the maps from the former Service Hydrographique de la Marine. Its old number was 4044 B-47, and its new number is R67-50 (see Image 6, page 272). The map dates about 1676 and was probably drafted in Paris to incorporate the latest cartography of the fathers in Canada. The map covers an area slightly larger than that of the Marquette Map, whose outline has been imposed in red on what is known as the “Jesuit Map” (see Image 7, page 273). Inside the box, the surest indication that the map relied on the Marquette Map are the features marked numbers 1 and 2. Number 1 indicates the due north-south course of the Illinois River at its junction with the Mississippi River, and number 2 shows the grossly swollen delineation of Lake Michigan (“Lac des Illinois”) to the east; neither of those features appears on any other contemporary map. The spellings of Indian ethnonyms follow, in large part, those of Marquette.

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21See Michael McCafferty, *Native American Place-Names of Indiana* (Urbana: University of Illinois Press, 2008), 20. McCafferty points out that Marquette used capitals in order to make it easier to offer transliterations of Indian names.
22Ibid., 190n2.
23See Campeau, “Les Cartes relatives à la découverte du Mississippi.” But Campeau did not enter into a close examination of the cartography, as that was not his main purpose.
Within the box, the Jesuit Map makes many improvements to the basic outline of the Marquette Map. The Mississippi River is extended to the northwest, and the site of the 1661 death of Father René Ménard is marked (see Image 7, Number 3, opposite page). Crosses also mark many former and existing mission sites, and at the Chicago site, something like the north and south branches of the Chicago River is plotted (see Image 7, Number 4, opposite page). The rivers leading to the lakeside towns to the north of Chicago are also plotted more precisely (see Image 7, Number 5, opposite page). To the south the Mississippi River is extended past latitude 34 to about latitude 31, but the source of the change is unknown to us.
Outside the box the Jesuit Map extends north to Hudson Bay and gives a rather exaggerated impression of Lake Saint Clair linking Lakes Huron and Erie (see Image 7, Number 6, above). Finally, the map contains the legend in the southeast corner: “Manetouaki, c'est-à-dire Européans.” That must be a hint of the Spanish presence in what is now northwest Florida, around Pensacola. It is probably the chief evidence for linking the map to the later ones on which the legend “Manitoumie” is prominent. In general, the map represents an attempt by the Jesuit authorities in Canada (probably in the person of Claude Dablon or Claude Allouez) to combine elements of the Marquette Map with information from other sources in order to create a more complete image of their mission territory.
A comparison of the latitudes as recorded on the three maps—the 1670 Great Lakes Map, the Marquette Map, and the Jesuit Map—offers some additional clues about their possible construction:

<table>
<thead>
<tr>
<th>Site</th>
<th>True Latitude</th>
<th>Great Lakes Map</th>
<th>Marquette Map</th>
<th>Jesuit Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duluth</td>
<td>46°45'</td>
<td>46°15'</td>
<td>46°</td>
<td>46°</td>
</tr>
<tr>
<td>Michillimackinac</td>
<td>45°52'</td>
<td>45°</td>
<td>45°</td>
<td>45°</td>
</tr>
<tr>
<td>Green Bay (town)</td>
<td>44°30'</td>
<td>43°30'</td>
<td>43°50'</td>
<td>43°30'</td>
</tr>
</tbody>
</table>

The figures for the Great Lakes Map and for the Marquette Map are uniformly lower than the accurate figure, often by almost a full degree, and they are copied by the compiler of the Jesuit Map now in Paris. The uniformly low figure for the Great Lakes Map and the Marquette Map suggests that the cartographers were using the same instruments and/or methods; indeed, Marquette may have been the cartographer in each case. However, the southern regions on the Jesuit Map were markedly closer to the true figure, suggesting that renewed expeditions made more accurate observations:

<table>
<thead>
<tr>
<th>Site</th>
<th>True Latitude</th>
<th>Marquette Map</th>
<th>Jesuit Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois River junction</td>
<td>38°57'</td>
<td>38°5'</td>
<td>38°40'</td>
</tr>
<tr>
<td>Missouri River junction</td>
<td>38°50'</td>
<td>37°55'</td>
<td>38°25'</td>
</tr>
<tr>
<td>Ohio River junction</td>
<td>37°3'</td>
<td>35°55'</td>
<td>36°40'</td>
</tr>
<tr>
<td>Chicago River</td>
<td>41°52'</td>
<td>40°25'</td>
<td>40°</td>
</tr>
</tbody>
</table>

What can the place-names on the Marquette and the Jesuit maps tell us? Apart from the names of Jesuit missions, there are thirty-three tribal names on the Marquette Map, written in capitals as if the author feared that it might be difficult accurately to read such names in longhand. Roughly half of those names are included on the Jesuit Map along with nine new tribal names, making twenty-five in all.

All those names do pose the problem of the degree to which they were included in subsequent maps, including particularly those that seem to have derived from the sequence of maps credited to “Jolliet.” That is another research project. Still, the relationship between hydrographic outlines, latitudes, and names on the Marquette and Jesuit maps is entirely consistent, suggesting that someone in Québec had access to the Marquette Map and other material and sent the information back to Paris, probably in 1676.

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24See McCafferty, Native American Place-Names of Indiana, 20.
How does the Marquette Map compare to a modern map? It is notoriously difficult to assess the accuracy of a historic map by reference to a modern one, given the variety of projections. But the fit between the Marquette Map and a map of the same area from the *National Geographic Atlas of the World* (1981) is revealing. When overlaying the Marquette Map (in red) a degree or so north of its assessed position, there is a remarkable degree of accuracy for the central area of the Mississippi River (see Image 8, above). From the Wisconsin River southward, succeeding tributaries of the Mississippi River are placed very close to their proper location. In a way, that is not surprising, as the trend of the great river is generally north-south, demonstrating that the Jesuits’ ability to assess latitude was not betrayed by their inability to generate accurate figures of longitude. That weakness is clearly demonstrated, though, in the northerly areas. Lake Michigan is shown far to the east of where it in fact ends, just as Lake Superior is given a far-too-long east-west extension. The general shape of the map thus confirms that the main
obstacles for Canadian Jesuit cartographers of the period was their inability to calculate longitude, even though mapmakers in other parts of the world were making very accurate observations. 25

We are confident that the Marquette Map is the work of Father Jacques Marquette for the following reasons:

1. The map forms part of a set of five documents, three of which are undoubtedly authentic.
2. There is nothing suspicious about the map's physical characteristics.
3. The Marquette Map shows the same problem in calculating latitude as does the well-known and slightly earlier Jesuit map of the Great Lakes (see Image 2, page 266), thus suggesting that they were the work of similarly trained cartographers, if not indeed of the same person, possibly employing the same defective instrument.
4. Distinctive elements of the Marquette Map are found on a map preserved in Paris since the seventeenth century. That map contained not only material derived from the Marquette Map but also elements from subsequent explorations.
5. Some of the tribal names included on the Marquette Map, and not elsewhere, subsequently found their way onto Jesuit and other maps of the later seventeenth century.

We recognize that this argument may not end speculation on the creator of the map. However, the evidence surely is a corrective to claims that a Jesuit conspiracy gave Marquette undeserved credit. The use made of the map, which was a consolidation of the cartographic knowledge gained by the Jesuits over the previous five years, is another matter, and a difficult problem to which we hope to return.

25 At this very time, Jamaican planter Charles Boucher was able to fix the longitude of the island with remarkable accuracy. He relied on his observation of two eclipses of the moon, and the collaboration in England of the astronomer Edmond Halley, with whom he had been a student at Oxford University. The Jesuits of Canada were well able to predict the eclipses of the moon but they lacked a collaborator in France. See Buisseret, "Charles Boucher of Jamaica and the Establishment of Greenwich Longitude," Imago Mundi 62 (2010): 239–47.
Buisseret 2011 – short captions for the images.
By Robert DEROME, April 16, 2015.

Image 1, page 265 - Marquette map.


Image 3, p. 268 - Marquette map annotated. Number 1: southerly course of the Illinois River for a hundred miles or so before it joins the Mississippi River. Number 2: So what of Marquette's calling part of the Mississippi River the "R. de la Conception"?

Image 4, page 269 – Non identified map - After Marquette's version, the feature was lost by most subsequent mapmakers, who often showed the Illinois River entering the Mississippi River on a west-south-westerly course.

Image 5, page 270 - John Melish map of 1816.


Image 7, page 273 – The Marquette map (marked in the red box) surimposed on the Jesuit map of 1676.

Image 8, page 275 - the fit between the Marquette map and a map of the same area from the National Geographic Atlas of the World (1981) is revealing. When overlaying the Marquette Map (in red) a degree or so north of its assessed position, there is a remarkable degree of accuracy for the central area of the Mississippi River.