

A STUDY OF THE CHARACTERISTICS OF VIETNAMESE MAPS IN THE 19th CENTURY WITH SPECIAL REFERENCE TO *HOÀNG LÊ CẢNH HƯNG BẢN ĐỒ*

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Abstract

Hoàng Lê Cảnh Hưng bản đồ is an atlas which depicts the road from the capital (Thăng Long) to Champa. This article applies statistical, comparative and interdisciplinary methods and a cartographic study-oriented approach to discuss the characteristics of cartography in the 19th-century Vietnam, focusing on *Hoàng Lê Cảnh Hưng bản đồ*. Although the extant atlas is a copy made in the 19th century (1833), it retains many of the original text captions. However, some changes were also made in accordance with the copyist's geographical knowledge at that time.

Keywords: *Map; Cartography; Textual study; Hoàng Lê Cảnh Hưng bản đồ*

1. Introduction

Hoàng Lê Cảnh Hưng bản đồ 皇黎景興版圖 is a travel atlas¹ written on paper, 30x17cm; it consists of 40 pages, with Hán script (Chinese characters) written in the form of Khải characters (楷書), and depicts the road from the capital (Thăng Long) to the ancient Champa Kingdom. This is a valuable text in the context of the various transmitted versions of the *Thiên Nam tứ chi lộ đồ*² 天南四至路圖, an atlas depicting the road from Thăng Long to Champa which was copied in the 17th year of Minh Mệnh (1836), but comparative study is necessary in order to identify similarities as well as differences between the variants. Previously, I have briefly introduced the atlas [3], provided a chronological assessment [1], and undertaken some toponymy research [2], but I

have not discussed the style or its cartographic characteristic 繪製, using pen or chalk to depict cartographic features. In this article, I delve into the characteristics of *Hoàng Lê Cảnh Hưng bản đồ*. This will have the benefit of rearranging our understanding of the transmitted versions of the atlas more scientifically. On the other hand, I also shows the copyist's understanding of geographical knowledge at that time. Thus, in this article, I seek to clarify the characteristics and style of ancient Vietnamese maps with a focus on *Hoàng Lê Cảnh Hưng bản đồ*.

2. Characteristics and style of *Hoàng Lê Cảnh Hưng bản đồ*

With regard to the characteristics and style of *Hoàng Lê Cảnh Hưng bản đồ*, I will discuss the following topics in order: map scale, direction,

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symbols, colors, materials and the cartographers.

2.1. Map scale

The map scale is the ratio of the distance between the length of any line segment on the map and the corresponding plane on the ground [9]. East Asian cartography can be divided into two types: scale maps and descriptive maps³. Both Chinese and Vietnamese cartography have the common feature that most existing maps are descriptive ones. That is to say, taking the concept of “round sky and square earth” as a basis, map design shows respect for political and economic central places and social strata as well, so the cartographer uses a lot of visual symbols that are out of scale. For example, because of the importance of the capital or a district town, the cartographer often places them at the map center, even using a lot of space to represent them. Obviously, this diminishes the accuracy of the map. Furthermore, in order to emphasize the importance of the citadel, many map symbols are used to describe the citadel, which is obviously not in accordance with the scale. Some areas, like small islands, are drawn especially small, indicating that they unimportant areas.

From the perspective of modern cartography, the premodern cartographer sought to emphasize some cartographic phenomena, in order to convey spatial views and concepts. The concept of round sky and square earth was maintained until the end of the Nguyễn Dynasty, even though Western science and technology had reached Vietnam in the 17th century. Because Western science and technology came from outside, they were not welcomed by the local government. This was due to the national superiority complex, along with ingrained traditional culture.

2.2. Direction

The direction 方向 is one of the basic indispensable elements in a map. It is a common feature of road maps in Vietnam and China that they give no indication of direction. This feature

was acknowledged by Khương Đạo Chương 姜道章, who wrote that “the reader (the person who reads the map) is the one who determines the direction of the map” [10]. Despite such common features, map direction in Vietnamese maps is not similar to that of Chinese ones. While multi-directionality in Chinese cartography was changed from time to time, especially from the Song Dynasty onwards, the direction of road maps in Vietnam was maintained and was stable throughout the history of cartography with the west on top, the east at the bottom, the north on the right and the south on the left.

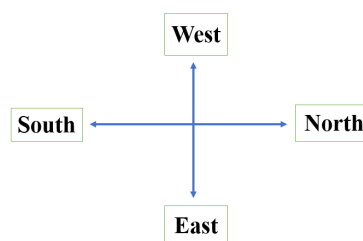


Figure 1. Direction of itinerary maps

This representation of orientation was determined by geographical factors: since Vietnam stretches from north to south, and has a long and narrow shape with a meandering coastline [4], the optimal choice was to represent the north-south axis horizontally. Thus, it was the Vietnam’s geographical location, and the traditional concept associated with that determined characteristics of road maps and other types of Vietnamese maps. It became a convention to depict from right to left, from top to bottom and that method of depiction was maintained throughout the history of ancient Vietnamese maps.

2.3. Annotations

A notable feature of this road map group is the method of generating text. There were two ways of generating map text used: one is a combination of the use of symbols 符号 and notes 注記 while the other method uses pictorial representation. The first method appeared as early as the 17th century, but by the 18th and

early 19th centuries it was no longer in use.


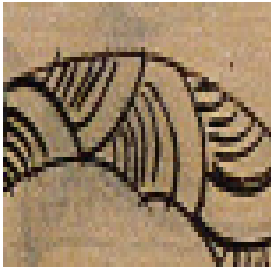


To make this clearer, I will divide my discussion into two subsections, Symbols and Notes, for discussion and evaluation.

2.3.1. Symbols

Symbols are used to represent features on a map. Usually such badges represent the

basic descriptive units of cartography such as mountains, rivers, residents and roads. In addition to the basic symbolic units, because *Hoàng Lê Cảnh Hưng bản đồ* is a road map, it also represents many other geographical elements such as stations on the way, pagodas, citadels and historical sites.

Table 1. Some basic symbols

No.	Features	Descriptive symbol
1	Mountain	
2	River	
3	Road	
4	Prefecture/district; village	
5	Border	None

It can be seen that mountains and rivers are described by the pictographic method (景法/visually describe things) while striated bilinear lines represent rivers. Roads are represented by a rather strange method, using what looks like insect hair on either side of the road (this is provisionally called the caterpillar method 毛虫法). Geographical names are placed in squares

or rectangles, and circles are used to represent administrative units. The inconsistency between these various forms of expression causes difficulties, and can even provide readers with confusing information. In addition to the differences indicated above, maps copied in the Nguyễn Dynasty do not make use of methods such as hachure 量滄法⁴, hill shading 量渲法⁵, or

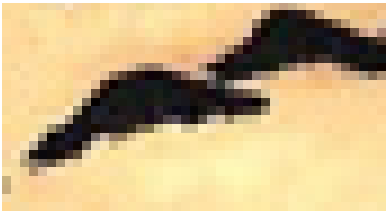



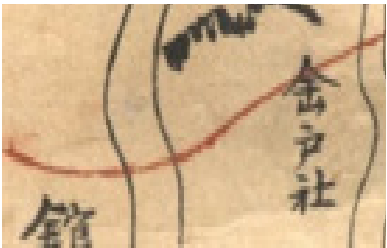


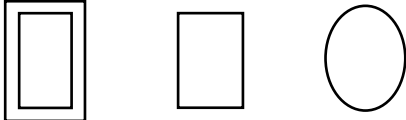
graduation of tints 分層設色法⁶.

A remarkable feature of *Hoàng Lê Cảnh Hưng bản đồ* is that no symbol is used to mark the boundaries between administrative subdivisions. This is unusual both in Vietnamese road maps and in most other maps of Vietnam. However, on studying these issues in depth, I have found that each administrative unit is represented by a single map page; thus, for example, page 5a depicts the capital, page 5b

Thanh Trì district, and page 6a Phú Xuyên district. The advantage of this method is that it makes reading the map easier, but in terms of cartographic science, it diminishes the accuracy.

In this article I will concentrate on a stylistic comparison between *Thiên Nam tứ chí lộ đồ thư* and *Hoàng Lê Cảnh Hưng bản đồ* in order to clarify the similarities and differences. Please see the following table:

Table 2. Comparison of some symbols between *Thiên Nam tứ chí lộ đồ thư* and *Hoàng Lê Cảnh Hưng bản đồ*

Geographical factor	<i>Thiên Nam tứ chí lộ đồ thư</i>	<i>Hoàng Lê Cảnh Hưng bản đồ</i>
Mountain		
River	 (河流/ river)	 (河流/ river) (海洋/ sea)
Road	 (单线 single line)	 (毛虫法 Integration method)
Border	None	None
Site		

It is not difficult to see that maps copied during the Nguyễn Dynasty tend to use more realistic descriptive symbols. For example, in the case of the mountain symbol, the road maps use the same pictorial method (景法), so that the mountain is depicted realistically, even including bushes on the mountain. This is completely different from the “mountain triangle” (三角山) method, in which the mountain is represented by a triangle, as in *Thiên Nam tứ chí lộ đồ thư*. The additional depiction of grassy bushes on mountain symbols is not peculiar to Vietnam, for it also appeared on Chinese maps, from the Ming Dynasty onwards [11, p. 71].

Another case is the symbols representing rivers and streams. In the road maps of the Lê Dynasty, they were basically bilinear symbols, combined with the color blue. Obviously, if maps were produced in that way, it would lead to the lack of a clear distinction between rivers and the sea. In the maps copied in the Nguyễn Dynasty, there was a distinction between rivers and the sea. Notably, rivers were depicted with more details shown, such as waves, and the sea area was depicted with wave ridges. Although these are small details introduced by the copyists, they reflect progressive thinking and active correction of previous deficiencies.

Another case that should be mentioned is the symbol used for road. In road maps they are basically represented by a single red line: in *Hoàng Lê Cảnh Hưng bản đồ* alone roads are depicted by the “caterpillar” method. This method is quite strange, and is not found in other pre-modern Vietnamese maps. However, this method was used in China, in Qing Dynasty maps [11, p.72]. Possibly, when introduced to Vietnam, this method was applied and modified to suit the aesthetic views of the Vietnamese people; as such, it can be seen as an example of acculturation, introduction and change. It can be seen that maps copied in the Nguyễn Dynasty

still retained most of the map drawing styles of the Lê Dynasty: the styles of expression changed but not by much, because the cartographers were influenced more or less by the scientific and technological knowledge of that time.

2.3.2. Notes

Notes on road maps are explanations intended to add missing information. It can be said that the note is an important part of the map content.

They do not represent elements in the natural world, but they are related to the geographic objects represented on the map. It is not difficult to see that maps without notes only depict geophysical space and cannot give geophysical names or other details. Notes on road maps are normally placed above the map, separate from the cartographic representation below. Unlike Chinese maps of the same period, the notes are located directly on the maps. The combination of symbols and notes is typical of cartography in the Ming-Qing dynasties, but it gradually decreased during the Republican period [11, p. 70].

The same is true of Vietnamese cartography up to the 18th century. On maps such as *Quảng Thuận đạo sử tập* 廣順道史彙⁷ and *Đồng Khánh địa dư chí* 同慶地輿志 not so many notes are shown on the maps. In addition to the advantages of notes mentioned above, maps that combine notes and pictorial depiction need to use a lot of words to explain the features depicted. In other words, the drawn lines do not provide all the necessary information in a systematic way.

This shows that there is no harmonization between the system of symbols and the information and images, and no precise data on location and distance are yet provided [6]. So does *Hoàng Lê Cảnh Hưng bản đồ* follow this general trend? Please see the following preliminary statistical table:

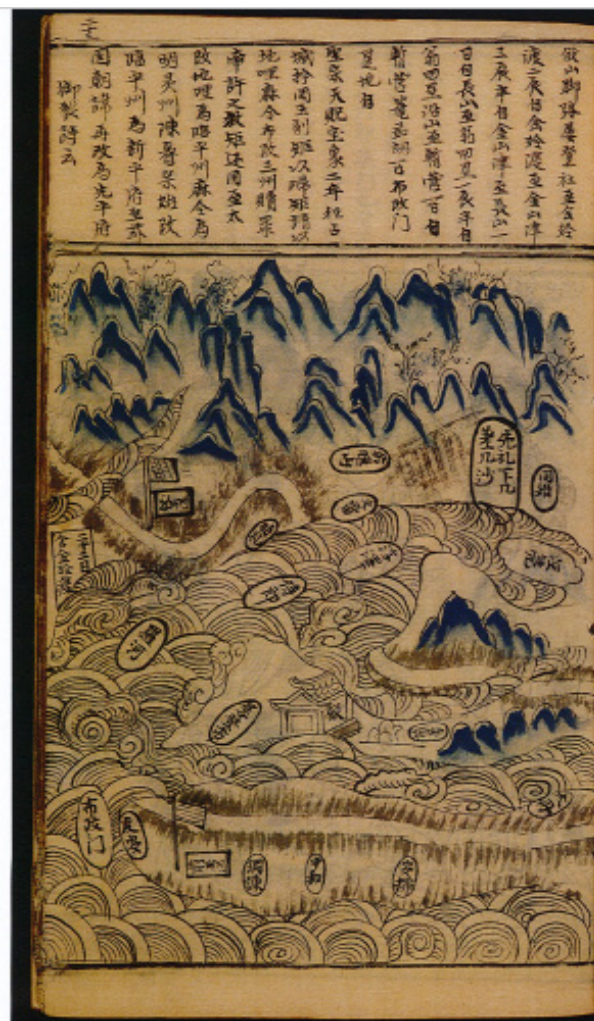
Table 3. Statistics of notes in *Hoàng Lê Cảnh Hưng bản đồ*

<i>Hoàng Lê Cảnh Hưng bản đồ</i>			
Page No.	X indicates notes exist on the page; 0 indicates there is no note.		
1	0	21	0
2	x	22	0
3	x	23	x
4	x	24	x
5	x	25	x
6	x	26	x
7	x	27	x
8	x	28	x
9	x	29	x
10	0	30	x
11	0	31	x
12	0	32	x
13	0	33	x
14	0	34	x
15	0	35	x
16	0	36	x
17	0	37	x
18	0	38	x
19	0	39	x
20	0	40	0

Note: x indicates notes exist on the page; 0 indicates there is no note.

As clearly shown in the table, there are no notes from page 10 to page 22. In addition, from page 2 to page 9, although notes were provided, they do not concern the route but instead the number of districts in the various provinces (Kinh Đô, Thanh Hóa, Nghệ An, Sơn Nam, Sơn Tây, Kinh Bắc, Hải Dương). The notes on the route were actually copied from page 23 of the map, i.e. the area from Bồ Chính (Ranh river, Quảng Bình today), where there was often fighting between the Nguyễn Lords in the South⁸ and the Trịnh Lords in the North⁹. The motive for this was to partly serve the political interests of the

Lê Dynasty; consequently, the development of Vietnam's cartography was always accompanied by the efforts of the governments in history to extend control over the country [8, p. 508]. Furthermore, as the frequency of notes decreased, the information to copy was carefully selected [3]. Thus, copying the notes reflected the political goals of the Lê Dynasty. In addition, through the act of copying, the copyists were affected by the general evolution of cartography, which led to the gradual reduction of notes on the map.



Page 9a of the map, there is no note above.

Page 23b of the map, there is a note above.

Figure 2. Some pages of *Hoàng Lê Cảnh Hưng bản đồ* with and without notes

2.4. Color

As seen in the cartography of Vietnam in the 19th century, the use of multiple colors became widespread (See Figure 3). Previously, during the Ming Dynasty, colors were used in a quite limited way, basically only blue and black [11, p. 71]. By the mid-18th century, the maps of Vietnam and China tended to increase the number of colors so as to create more variety. Perhaps the use of color in cartography in Vietnam was influenced by traditional Chinese cartography -

which means that maps were not seen as merely images but also as paintings [13]. In Vietnam, maps before the 18th century usually used only 2 or 3 colors, including black for geological objects, blue for mountains or rivers and red for roads. *Hoàng Lê Cảnh Hưng bản đồ* is a map copied in the 19th century, but only 2 colors are used, including black for geological objects and blue for mountains. Thus, it respected the original 17th century cartography characteristic of using few colors.



Map of Từ Liêm district
in *Đồng Khánh địa dư địa chí*



The first page
in *Hoàng Hoa sứ trình đồ*¹⁰

Figure 3. Image of some colorful maps in the 19th century

2.5. Materials

The ancient maps of Vietnam mainly drawn on paper and *Hoàng Lê Cảnh Hưng bản đồ* is no exception. Recently, however, some maps have been found to be drawn on other materials, for example the Thủy Tú Map (map of Thủy Tú hamlet, now Thủy Tú village, Hương Vĩnh commune, Thừa Thiên Huế province) which was made in the 14th year of Minh Mệnh (1833) on canvas. Meanwhile, in China, Ming Dynasty, maps used silk, paper, wooden planks or steles [14], and then the Qing Dynasty added bronze, silk, paper, and printing paper [11, p.70]. In Vietnam, in addition to paper, silk was also used, but there are almost no cases of inscriptions. Vietnam maps were usually hand-drawn on paper, for three reasons: firstly, carving printing blocks for maps was more difficult than for books; secondly, since maps were considered to be works of art, hand-drawing was preferable; and thirdly, maps were mostly made by the government and considered to be confidential documents, only to be used by high-ranking officials, and not for use by the public.

2.6. Cartographers

As is well known, the original *Thiên Nam tứ chí lộ đồ thư* was produced by Đỗ Bá Công Đạo who passed the examinations and was appointed governor of Thạch Hà district (now in Hà Tĩnh province). He drew the map at the request of the Trịnh Lord [5]. Who then copied the *Hoàng Lê Cảnh Hưng bản đồ*? As far as we know at present, *Thiên Nam tứ chí lộ đồ thư* is the earliest road map extant that preserves several methods of representation and reflects the cartographer's concepts. It is because people in each era were aware of the importance of road maps that each individual tried to produce a copy for private use [2]. In principle, since maps were mostly made by the government and were considered confidential documents, the people who were exposed to the documents were mostly mandarins. In the process of copying, it was common not to include the cartographer's name on the map, as can be seen from many existing copies. I shall leave detailed discussion of the cartographer for another occasion.

3. Conclusion

Hoàng Lê Cảnh Hưng bản đồ is a variant among the transmitted versions of *Thiên Nam tứ chí lộ đồ thư*. It was copied in the 14th year of Minh Mệnh (1833), but the text still respects the characteristics of 17th-century cartography in Vietnam as found in the original. In addition, the text also reveals changes made in accordance with the copyist's geographical knowledge. For example, the method of depicting mountains was replaced by the pictorial method, and the "caterpillar" method was gradually introduced to replace the single lines representing roads. This is one of the directions that need to be pursued as we study the transmitted versions of *Thiên Nam tứ chí lộ đồ thư* in the future.

Notes

¹ An important map-form in the Lê Dynasty was the road map which often depicted routes from the Capital to locations inside or outside the North-South Vietnamese border. This type of map began with the campaign to conquer Champa in 1471 under Lê Thánh Tông and often redrawn, depicting routes from Kinh Do to locations inside or outside the northern Vietnamese border [5]

² *Thiên Nam tứ chí lộ đồ* 天南四至路圖 (Atlas of roads from Annam to four places), also known as *Toản tập Thiên Nam tứ chí lộ đồ thư* 纂集天南四至路圖書, *Thiên Nam lộ đồ* 天南路圖 or *Thiên Nam tứ chí thư đồ* 天南四至書圖. Đỗ Bá Công Đạo (?-?) from Nghệ An drew it and made notes in 1686 by order of Lord Trịnh Căn. The atlas includes 4 volumes: volume 1, waterways and land routes from Thăng Long to Champa (now Ninh Thuận, Bình Thuận); volume 2, from Thăng Long to Khâm Châu (Chinese border district on the sea coast); volume 3, from Thăng Long to Guangxi province, Yunnan (China); volume 4, from Thăng Long to Bắc Quan Môn (Hữu Nghị border gate).

³ Maps can be divided into two types. The first indicates scale, uses abstract symbols, and shows geographical elements that can be measured. This type belongs to traditional analytical cartography; they are scientific maps as well as quantitative maps. The other type has no scale, the symbols on the map are pictorial,

and the map shows geographical elements that cannot be measured; this type of map belongs to the traditional descriptive map [10, p. 265].

⁴ This method mainly represents the direction of a slope, and by the overall thickness and density, they provide a general sense of the slope. Not being numeric, they are less useful for a scientific survey than contours but can successfully communicate fairly specific topographical shapes. This method appeared in the 19th century and has the advantage of showing the inclination on the ground very clearly. However, there are disadvantages: the elevation of the ground cannot be determined, the morphology cannot be clearly shown, and on a small-scale the map only the position of the mountain can be shown, not the slope [11, p. 77].

⁵ This method mainly uses dark and light colors to indicate the shallowness of the terrain. This method was available in the 19th and 20th centuries. It has the advantage of clearly showing the state of the terrain. In addition, this was also a type of symbol method, which was very suitable when combined with a meandering line formed by contiguous points of the same height in a topographic map (等高线). The only drawback is that this method can only roughly represent the terrain, and the intensity of the colors does not have a uniform standard [11, p.77].

⁶ Gradual color variation was added between contour lines to indicate the undulation of the terrain. This method appeared in the second half of the 20th century. It has the advantage of maintaining the strong points of contour lines, and can add different colors, making the map very prominent. The disadvantage is that gradually added colors will change over time, making it easy for others to mistake it as stratified terrain [11, p. 77].

⁷ *Quảng Thuận đạo sử tập* is a historical collection of Đạo Thuận Hóa and Quảng Nam. Đạo was a contemporary administrative unit (like province today). The book was compiled by Nguyễn Huy Quỳnh (1734 - 1785) between 1775 and 1785 when he joined the expedition to the South (by the Trịnh Lord) in 1775 and then served as the governor general of Thuận Quảng, with the

title of generalissimo and marquis.

⁸ Đàng Trong was the way Vietnamese people referred to this place; in documents, it has many different names; historical sources record this area as Nam Hà to distinguish it from Bắc Hà. Chinese and Japanese bibliographies call this area Quảng Nam Quốc, even translated and understood as Nội Lộ, Nội Khu [12, p.2]. Western documents call it Cochinchina (Giao chỉ chi na) or Quynam; 16th century Portuguese texts recorded the word Cochinchina as Quachymchyna, Concamchinam, Cauchymchyna, Cachenchina, Cauchenchina, Cauchinchina and Coccincina [7, p. 28-39].

⁹ In the 17th century, Westerners came into contact with both Vietnamese dynasties. They called the Northern Dynasty Đàng Ngoài - Tonkin (often recorded as Tonqueen, Tongking, Tunquin, Tunchimm), which is a transliteration of Đông Kinh in Vietnamese with the meaning of "Eastern capital" meaning Hanoi to distinguish it from the "Western capital" built in the early 15th century (Tây Kinh or Tây Đô is the citadel built by Hồ Quý Ly in 1400-1407 in Thanh Hóa). This dynasty had territory extending from the southern border of China to the Hà Tĩnh area [7, p. 27].

¹⁰ *Hoàng Hoa sứ trình đồ* is an atlas recording information about the journey of the ambassadors of Đại Việt in the 18th century; it was edited by Nguyễn Huy Oánh (1713 - 1789) in the period 1765-1768. The map has a size of 30 x 20 cm, consists of 7 parts, of which the main part is a journey map with 204 pages detailing and describing nature, people, citadels, villages, and more importantly communication activities of the embassy with the people and the government.

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