

## “A highly cultivated country”: Charles Le Gendre’s Mappings of Western Taiwan, 1869-1870\*

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### ABSTRACT

This article examines U.S. Consul Charles Le Gendre’s mappings of “the Chinese division of the island” of Formosa as documented in the geographical, geological, and textual representations he produced in the early 1870s. In late 1869, Charles Le Gendre conducted an investigative journey from the northern port city of Tamsui down along the western coast of Taiwan to the prefectoral capital of Taiwanfu. Details of that expedition were recorded in Le Gendre’s unpublished, illustrated travel report, *Notes of Travel in Formosa*, and sketched on a color-coded map, “Formosa Island and the Pescadores,” which was revised by U.S. Coast Survey cartographers and published by the U.S. Government Printing Office in 1871. The texts, maps and geological sections produced by Le Gendre, as well as the photographs commissioned to illustrate his manuscript, are the primary materials employed for this historical research.

In general, I analyze the work processes undertaken by Le Gendre as he mapped the topography and terrain of the western plains and bordering foothills, and the geographical, geological, cartographic and textual products of his investigative work. Le Gendre’s cartographic discourse, his experiential encounters with the landscape, and his attempts to systematize and disseminate the knowledge produced on this 1869 trek are all subjects addressed in this article. Major sections are devoted to analyses of Le Gendre’s unique mappings of western Formosan towns and villages, Qing administrative geography, local society and culture, agricultural resources, and geological formations. In addition, a counter-mapping of Le Gendre’s experience on the road is attempted by focusing on the spots where Le Gendre and his party of chair-bearing coolies, European guides (John Dodd and William Pickering), and photographic artist halted. Brief attention is also given to Le Gendre’s comparative historical geography in both textual and cartographic representations. Finally, I have shown how

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Le Gendre's mappings of western Formosa influenced official Euro-American cartographic production for several decades after the publication of his textual and cartographic mappings of Taiwan in the early 1870s.

**Keywords:** Maps, Cartographic Discourse, Historical Geography, Natural History, Geology, Knowledge Production, Formosa, Nineteenth Century, Counter-mapping

1. Introduction
  2. Layers of geographical and topographical knowledge
  3. Experience mapped
  4. Social and cultural geography
  5. Tracing the quality of cultivation
  6. Historical cartography
  7. Rocks, pebbles, sand and clay: The geological mapping
  8. Conclusions
- 

It may seem a rash attempt to endeavor to separate, into its different elements, the magic power exercised upon our minds by the physical world, since the character of the landscape, and of every imposing scene of nature, depends so materially upon the mutual relation of the ideas and sentiments simultaneously exercised in the mind of the observer. (Alexander von Humboldt, *Cosmos*, 1849)<sup>1</sup>

Maps are of-the-moment, brought into being through practices (embodied, social, technical), *always* remade every time they are engaged with; mapping is a process of constant reterritorialization. As such, maps are transitory and fleeting, being contingent, relational and context-dependent. *Maps are practices* – they are always *mappings*: spatial practices enacted to solve relational problems.<sup>2</sup>

In effect, maps are systems of propositions, where a proposition is nothing more than a statement that affirms (or denies) the existence of something. As such, maps are arguments about existence.... Propositions supported by evidence and argument, even propositions simply sufficiently often *repeated*, soon enough solidify into facts.<sup>3</sup>

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<sup>1</sup> Quoted in Claudio Minca, “Humboldt’s Compromise, or the Forgotten Geographies of Landscape,” *Progress in Human Geography* 31: 2 (April 2007), p. 184.

<sup>2</sup> Rob Kitchin and Martin Dodge, “Rethinking Maps,” *Progress in Human Geography* 31: 3 (June 2007), p. 335.

<sup>3</sup> Denis Wood, *Rethinking the Power of Maps* (New York: Guilford Press, 2010), p. 34.

## 1. Introduction

Towards the end of 1869, I determined to examine the Western slope of the mountainous portion of Formosa from Kelung (雞籠) to Takao (打狗), and the plain that lies at the foot of it, and which may properly be called the Chinese division of the island.<sup>4</sup>

Thus begins Charles Wm. Le Gendre's only extant description of his travels through western Taiwan—"the Chinese division of the island"—from Tamsui (淡水) in the north to Taiwanfu (臺灣府) in the south. Le Gendre tells us he was accompanied on this December 1869 journey by "Mr. John Dodd, the pioneer of northern Formosa, a photographic artist,<sup>5</sup> and a number of followers." A photograph taken of the group near Ty-ka (大甲) indicates that Le Gendre's "followers" included some 16 porters, who carried the eight sedan chairs he had hired, and William Pickering, the well-known customs agent, explorer and trader, whose presence on this expedition was surprisingly not recorded by Le Gendre in his journal.<sup>6</sup>

In total, the trek lasted eleven days, with an additional "few days" spent at Kookow (邱九, 即邱苟, present-day 出礦坑)<sup>7</sup> exploring Dodd's petroleum well, Hakka tenant farms, and local trade depots. It was Le Gendre's seventh visit to Taiwan but his only attempt to explore the western half of the island.

Very few Europeans had traveled overland along this north-south road prior to Le Gendre's expedition, and fewer still left any report of such a journey. An anonymous traveler made that trek in reverse direction (Takao to Tamsui) in February, 1867, and published a brief record of his journey, using the penname "Z".<sup>8</sup> Two Frenchmen, M. Guérin and Joseph Bernard, published ethnographic

<sup>4</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa* (Mss. Le Gendre papers, 1875), vol. 1, p. 191. The manuscript of this travel journal / intelligence report is held in the Manuscript Room, Library of Congress, Washington, D.C.

<sup>5</sup> I have identified this photographer as St. Julian Hugh Edwards. See an earlier paper of mine: "Shots from the Shadows: The Formosan Images of St. Julian Hugh Edwards," paper for "Research on Taiwan in the United States and new research in Taiwanese history (2)," Institute of Taiwan History, Academia Sinica, Nankang, Taiwan, 7 December 2007.

<sup>6</sup> "Exploring party under a banyan tree near Ty-ka," *Notes of Travel in Formosa*, vol. 1, plate 36, p. 191. Only the photographer is absent from this photograph.

<sup>7</sup> See Appendix 1 for a complete placename glossary. In the text of the article, I have used Le Gendre's own romanization, as well as the Chinese characters used on his manuscript map. Where those Chinese equivalents are uncommon, I have also supplied alternatives which are more frequently used.

<sup>8</sup> Z., "Notes of an Overland Journey from Takao to Tamsui in the Early Part of 1867," *Notes and Queries on*



Image 1: "Exploring party under a banyan tree near Ty-ka"

and linguistic reports based on their 1860s' treks among aboriginal communities in north and central Taiwan, but these documents contain very little data on Chinese settler communities. Their published map of Formosa<sup>9</sup> provided scarce information for the "Chinese division of the island," as noted in their explanation for the silences on their map:

We voluntarily omitted, either in the plains or in the mountainous portion that the Chinese occupy, a crowd of small towns of little importance, and of which the names would not have much blackened the map.<sup>10</sup>

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*China and Japan* 1: 6 (29 June 1867), pp. 71-72. Perhaps the author was W.A. Pickering, for a listing of vocabulary items that only Pickering could have collected is printed on pages 70-71 of the same issue of this journal. Wm. Campbell noted in his huge bibliography of Western writings on Taiwan that "Z" had contributed articles to other periodicals in China.

<sup>9</sup> "Ile de Formose avec indication de l'emplacement des tribus aborigènes," 1868; available from [http://academic.reed.edu/formosa/gallery/Map\\_pages/Island\\_Maps/GuerinAborigineMap\\_S.html](http://academic.reed.edu/formosa/gallery/Map_pages/Island_Maps/GuerinAborigineMap_S.html).

<sup>10</sup> M. Guérin and M. Bernard, "Les Aborigènes de l'île de Formose," *Bulletin de la Société de Géographie de Paris* 5th series, 15 (1868), p. 542. Translation into English by Miranda Fix.

John Dodd surely traveled this road before Le Gendre did, but he left no record of doing so. Robert Swinhoe examined only a brief section of the road in 1856,<sup>11</sup> and British captives who were marched along this route before him left few details of what they saw or heard.<sup>12</sup> Thus, Le Gendre's travel journal, together with his maps, geological sketches and manuscript illustrations, are an invaluable source for exploring the earliest 19th-century EuroAmerican mappings of western Taiwan.<sup>13</sup>

Most foreign visitors to Taiwan in the 19th Century, with the exception of a few missionaries and merchants, chose to explore and write about aboriginal communities. "Chinese Formosa" was deemed mundane, or merely the same as southern China. Le Gendre held that same view, so why did he choose in late 1869 to explore the western half of the island? In *Notes of Travel in Formosa*, Le Gendre explains his reasons for doing so:

My object was to collect specimens of rocks from the hills and the beds of the numerous shallow rivers and creeks that have their sources in the mountains and discharge themselves into the Formosa Strait; to take bearings of the ranges of hills whose positions had not been ascertained; to locate towns of importance which were not yet laid down on the maps; to take photographic views of the country through which we would pass; and to collect such other information as might prove a useful contribution to the historical, geographical and geological knowledge of the island... Though the heavens were more cloudy than our [photographic] artist could have wished, I consoled myself with the reflection that we had come less for the purpose of making a collection of drawing-room pictures than of obtaining faithful representations of such places as has never before been visited by Europeans, and which would serve me for future reference in making maps and describing that region.<sup>14</sup>

<sup>11</sup> It was the portion near the port of Hongsan (香山): "Along the tops of the hills runs a fine military road 10 feet in breadth, from Tek-san (竹塹), towards Lokong (腦港 [中港]); but before it reaches the latter place, it forms [forks?] in with the sandy road from the west." See Robert Swinhoe, "A Trip to Hongsan, on the Formosan Coast," *Overland China Mail (Hong Kong)*, 13 September 1856, No. 130. John Shufelt generously shared this text with me.

<sup>12</sup> These were survivors from the British ship *Ann*, which ran ashore in northwestern Taiwan in March 1842. See Mr. Robert Gully and Capt. Denham, *Journals Kept by Mr. Gully and Capt. Denham during a Captivity in China in the Year 1842* (London: Chapman and Hall, 1844).

<sup>13</sup> Several records of travel on the north-south road after 1869 do exist. Notable among them are travel reports by Joseph Steere, T. L. Bullock and William Campbell (1873-1874), Kabayama Sukenori (1874), Herbert Allen (1875), and Arthur Corner (1876). However, none of those records provides the detail found in Le Gendre's textual and cartographic reports.

<sup>14</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, pp. 191-192; the underlining is my own addition.

According to this statement, Le Gendre’s focus of investigation was the “historical, geographical and geological knowledge of the island.” Collecting empirical data (rocks, bearings, elevations, photographs) was the first step in a larger project, whose ultimate goal was the mapping and “faithful representation of such places” never visited by Europeans.<sup>15</sup>

## (1) **Problematics**

In this paper, I am concerned with the nature of Le Gendre’s representations and mappings of “Chinese Formosa.” None of Le Gendre’s physical maps solely focus on the “Chinese division of the island” to the exception of the other areas of Taiwan.<sup>16</sup> Indeed, his *Notes of Travel in Formosa* and the maps I analyze below take as their main subject “Formosa Island”<sup>17</sup> in its regional context. However, Le Gendre’s deliberate goal of mapping western Taiwan by means of a personal investigation of that space in 1869, as well as the textual, cartographic and pictorial mappings that he produced, entice me to replicate his focus in my own analysis.

As the epigraphs to this paper suggest, I am interested in the *work* done by these mappings, both in terms of the work processes undertaken by Le Gendre, as he mapped the western plains and bordering foothills, and the products that resulted from his work. Ultimately, such productions include latter-day engagements with Le Gendre’s mappings, and I address those briefly towards the end of the paper. Any tension in my analysis may reflect, in part, the divisions in the geographical literature that has informed my own work. On the one hand, combining travel journal and physical maps as my sources encouraged the use of J.B. Harley’s notion of mappings as cartographic literature and cartographic discourse.<sup>18</sup> Here the focus has been the authors and readers of maps, and the circumstances under which mappings were produced and used. On the other hand, re-reading some of Alexander von Humboldt’s writings has recalled to mind the fundamental impact that landscapes have on humans *and* that human

<sup>15</sup> Highlighting Europeans and not Americans may seem strange for an American consul (stationed at Xiamen). However, far more Europeans were involved in mercantile and missionary endeavors in Taiwan in Le Gendre’s day than were Americans.

<sup>16</sup> However, several of his maps are limited to the Hengchun peninsula. See, for example, “Southern Formosa,” 1872; available from [http://academic.reed.edu/formosa/gallery/Map\\_pages/SectionMaps/Smaps/LeGendre\\_S\\_Form.html](http://academic.reed.edu/formosa/gallery/Map_pages/SectionMaps/Smaps/LeGendre_S_Form.html).

<sup>17</sup> To be exact, the physical maps cite “Formosa Island and the Pescadores” in their titles.

<sup>18</sup> J. B. Harley, “Maps, Knowledge and Power,” in Paul Laxton, ed., *The New Nature of Maps: Essays in the History of Cartography* (Baltimore: Johns Hopkins University Press, 2002, c1988), pp. 52-81.

emotions have upon our perceptions of landscapes, whether we map with words, cartographic signs, or visual tools.<sup>19</sup> Long hours spent with Denis Woods' newest book, *Rethinking the power of maps*, has called my attention to the semiotics of maps, the social relations of power embedded in any cartographic representation, and the counter-mappings that occur in the lives of cartographic projects.<sup>20</sup> Reading in the critical and historical GIS literature provided new insights regarding map and mapping metaphors, the ambiguities of representing space, and the possibilities that counter-mappings might hold for the historian.<sup>21</sup>

These influences upon my own research have led to a disparate set of analytical questions and interpretative strategies, all applied to a very small set of maps and mappings of western Taiwan. On the one hand, I'm asking very basic questions: What did Le Gendre see, which of those sites / sights did he map, and which did he overlook, or omit on purpose? On the other hand, employing his travel journal and Edwards' photographs of the trek has taken me down the path of exploring mapping practices. How (and when) did Le Gendre distinguish terrain into plateaus, valleys, hills, or mountain ranges? Likewise, how are parts and wholes constituted in the social and cultural realms of his mappings and what influenced those classifications schemes? Can we read his physical maps as we might explore a GIS mapping with its multiple layers and views? Did Le Gendre conceive of space in similar ways, despite the radical differences in his and our mapping technologies? Is it possible to recover from one or more of these layers the views of his collaborators in this cartographic project, such as the perspectives of sedan-chair bearers who carried him along the north-south road, or the informants who provided knowledge of cropping patterns beyond Le Gendre's viewshed range? Finally, I address the 'so what'

<sup>19</sup> Alexander von Humboldt, *Cosmos: A Sketch of a Physical Description of the Universe*, E.C. Otté, trans. (London: Henry G. Bohn, 1849). For a recent statement of subjectivity and spatiality, see John Wylie, "A Single Day's Walking: Narrating Self and Landscape on the South West Coast Path," *Transactions of the Institute of British Geographers* 30: 2 (June 2005), pp. 234-247.

<sup>20</sup> Denis Wood, *Rethinking the Power of Maps*.

<sup>21</sup> See, for example, Mei-Po Kwan and Ding Guoxiang, "Geo-Narrative: Extending Geographic Information Systems for Narrative Analysis in Qualitative and Mixed-Method Research," *The Professional Geographer* 60: 4 (November 2008), pp. 443-465; May Yuan, "Adding Time into Geographic Information System Databases," in John Wilson and A. Stewart Fotheringham, eds., *The Handbook of Geographic Information Science* (London: Blackwell, 2007), Ch. 9; J. B. Owens, "Toward a Geographically-Integrated, Connected World History: Employing Geographic Information Systems (GIS)," *History Compass* 5/6 (November 2007), pp. 2014-2040. I am indebted to Karl Grossner (Geography, UC Santa Barbara) for suggesting many of these texts. The LENS 2010 summer institute, organized by Diana Sinton (University of Redlands), stimulated very useful conversations regarding the disciplines of GIS and HGIS.

question that my elders often ask me: Did Le Gendre's idiosyncratic mappings of "the Chinese portion of the island" really matter much in the historical configurations of this space on the globe?

## (2) *The formats of Le Gendre's "faithful representations"*

The analysis that follows is based on four disparate types of representations produced by Le Gendre, assisted by his collaborators. Most valuable has been the textual record of his December 1869 expedition, which is included only in his unpublished manuscript, *Notes of Travel in Formosa*. The travel notebook that he must have composed in 1869 has not been passed down to us; there is no copy of it in his personal papers at the Library of Congress. No report of this trip was ever submitted to his superiors at the State Department.<sup>22</sup>

The second type of data is cartographic and comes in two separate editions:

- A. "Formosa Island and the Pescadores." 1870. Compiled by Gen.l Ch.s W. Le Gendre—U.S. Consul—Amoy and Formosa. Estimated scale: 1 : 222,000. Six large sheets, each sheet 96 x 64 cm., total size: 192 x 192 cm; mounted on linen & board. A smaller, photographic copy of this map is included in *Notes of Travel in Formosa*: Plate 2 in Vol 4.<sup>23</sup>
- B. "Formosa Island and the Pescadores." 1870. Compiled by Gen. Chs. W. Le Gendre, U.S. Consul, Amoy & Formosa. Photo-Lith. by the NY Lithographing, Engraving & Printing Co., Julius Bien Supt. Published as a supplement to Chas. W. Le Gendre, "Amoy and Formosa, China," in *Commercial relations of the United States, 1869* (Washington D.C.: Government Printing Office, 1871). A photographic copy of this map is included in *Notes of Travel in Formosa*: Plate 1 in Vol 4.<sup>24</sup>

It is not entirely clear how many hands were involved in the production of these two maps. The first map contains Chinese characters for some Taiwan placenames, and as Le Gendre did not know Chinese, it is likely that his consular clerk provided these Chinese names (not all of which are accurate).<sup>25</sup> Le Gendre may

<sup>22</sup> John Shufelt (Tunghai University) has been my collaborator on a project to publish a critical edition of *Notes of Travel in Formosa*. I am indebted to John for many of his readings and interpretations of Le Gendre's travel journal. Hopefully those ideas will be made public in the very near future.

<sup>23</sup> Another copy of this map was procured by Joseph Steere in preparation for his travels in Taiwan in 1873-1874. It is currently a part of Steere's personal papers at the University of Michigan.

<sup>24</sup> For a digital copy of this printed map, see: [http://academic.reed.edu/formosa/gallery/Map\\_pages/Island\\_Maps/LeGendre\\_S.html](http://academic.reed.edu/formosa/gallery/Map_pages/Island_Maps/LeGendre_S.html).

<sup>25</sup> See my earlier footnote above on placename romanizations and Chinese equivalents.

have hired an artist or draftsman in Xiamen (廈門) to assist in the production of this color-coded cartographic aid. The second map may have included alterations made by U.S. Coast Survey cartographers in Washington, D.C.<sup>26</sup> or the New York engravers, but lacking an original draft of that map, it's impossible to speculate further on such additions.<sup>27</sup> However, because Le Gendre included photographic copies of both maps in his *Notes of Travel in Formosa*, and because he shared copies of each map with colleagues in China and Japan, I consider both to be Le Gendre's representations.

In his statement of goals for this investigative expedition, cited above, Le Gendre gave his highest priority to collecting rock specimens and compiling geological data. In fact, however, few of the rocks catalogued for shipping to the New York Museum of Natural History came from this particular trek; most of those specimen were collected earlier and primarily from the northern region of Formosa, in the vicinity of Kelung.<sup>28</sup> However, three of his sketches of geological sections do relate to the western coast:

- (A) “SECTION near TUICK-CHAM [竹塹] (Tamsui Ting).”
- (B) “SECTION at HUNG-MO RIVER [紅毛港溪] (Tamsui Ting).”
- (C) “SECTION No 4. From the sea shore at Tong-Siau [吞宵] to West Peak [嘉里山], showing the geological formation as far as it is known .”

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<sup>26</sup> “The map annexed to this report was, like that of the Chinese coast, lithographed in the office of the Coast Survey. Being the first map of Formosa possessing any degree of accuracy that has yet been published, it is regarded as a valuable contribution to geographical knowledge, and, since the names of the various districts are written in Chinese, it may serve as a practical guide to travellers in that comparatively unexplored region, who are not acquainted with the language of the natives.” See *Commercial Relations of the United States*, 1869 (Washington D.C.: Government Printing Office, 1871), p. 3.

<sup>27</sup> A draft of an earlier edition of a map of Formosa, “Tracing of a sketch of the map of Formosa Island,” was submitted by Le Gendre to his superiors in Beijing and Washington, but that cartographic chart was completed before he made his north-south journey. For a copy of that draft map, see Le Gendre despatch No. 43, dated 31 March 1869, to J.R. Browne, U.S. Minister, Peking.

<sup>28</sup> See Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, p. 239ff and vol. 2, p. 63 for these catalogues. In a 4 November 1869 despatch to the U.S. Assistant Secretary of State, T.C. Bancroft Davis, Le Gendre stated that he had forwarded “seven boxes containing specimens of rocks, minerals, fossils, wood, coral, shells, textile fibres, seeds, etc.,” to the American Museum of Natural History in New York. Those items were accessioned and processed by the museum in 1869, but the rocks, wood samples, fossils, and shells are no longer associated with Le Gendre by name in the museum’s collections, according to John Shufelt’s communication with Kristen Mable of the museum, August 2002.



Image 2: "Formosa Island and the Pescadores," manuscript version.



Image 3: "Formosa Island and the Pescadores," published version.

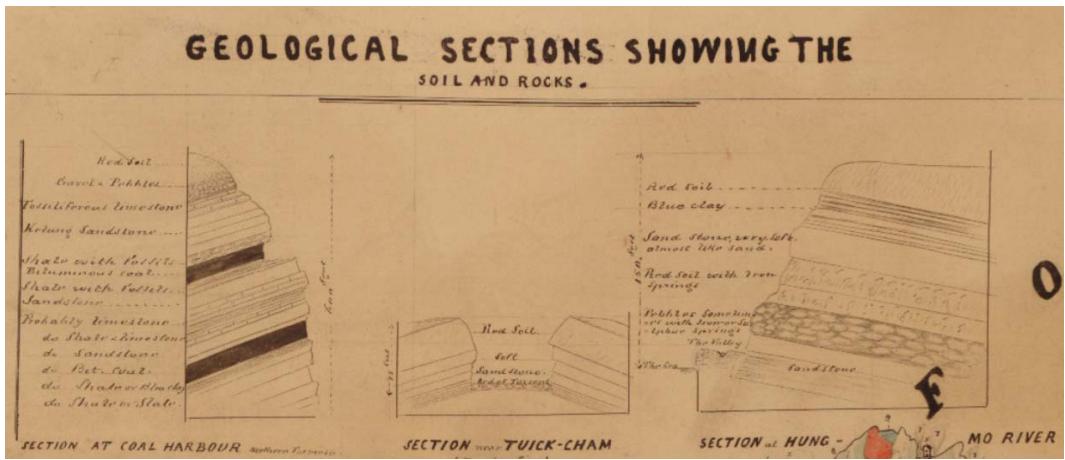


Image 4: “Geological sections showing the soil and rocks,” detail from “Formosa Island and the Pescadores,” manuscript version.

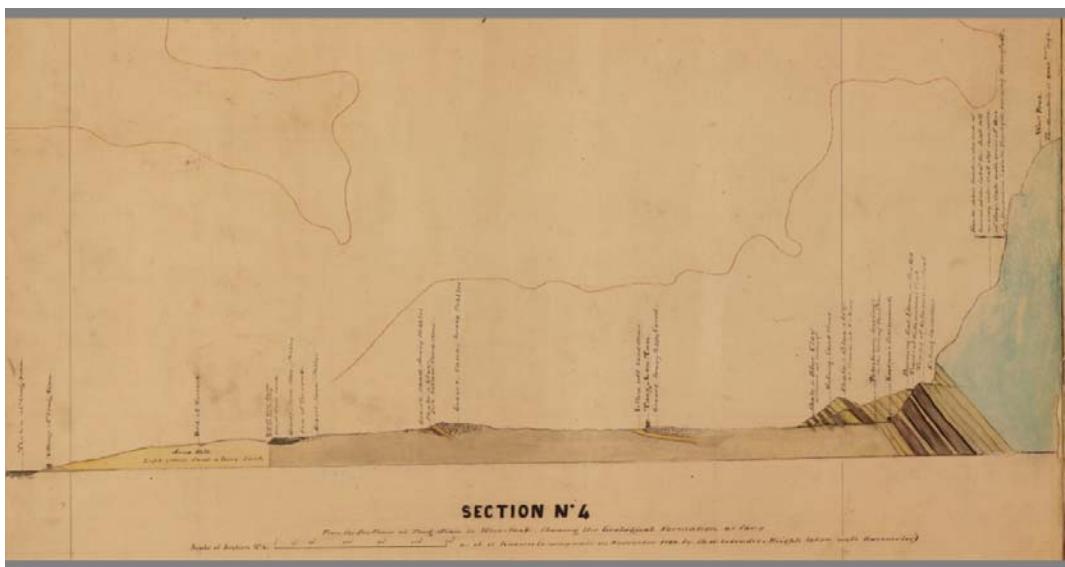


Image 5: “Section No 4,” detail from “Formosa Island and the Pescadores,” manuscript version.

Some additional geological data is included in his travel journal and as textual notes on both maps.

Finally, a small number of the photographs and water-color paintings, which were used to illustrate *Notes of Travel in Formosa*, are relevant to this December 1869 expedition. The photographs were taken by the photographic artist that accompanied Le Gendre on the journey, while the paintings were

commissioned by Le Gendre several years later, when he was in Japan serving as a foreign advisor to the Meiji government in Tokyo.<sup>29</sup>

Because I am primarily interested in analyzing the totality of Le Gendre’s “faithful representations,” I will combine examples from each of these sources in the analysis that follows. Where it is important to distinguish between the disparate formats, such differences will be amply noted.

## 2. Layers of geographical and topographical knowledge

In his statement of goals for the expedition of December 1869, cited above, Le Gendre appears somewhat confused about his priorities. Although geological and geographical data were foremost among the “objects” of his investigative trek, historical knowledge received pride of place in Le Gendre’s listing of contributions that his research might make. If one defines “geography” as broadly as the discipline is practiced today, then clearly geographical representations are the most important product of Le Gendre’s knowledge construction of western Taiwan. In contrast, even though his island-wide geological analysis was exceptional for its day, much less attention was given to that discipline in his descriptions of western Taiwan. Furthermore, historical analysis figures very little in this segment of *Notes of Travel in Formosa* and is scarcely evident on his maps.

### (1) *Hierarchy of places*

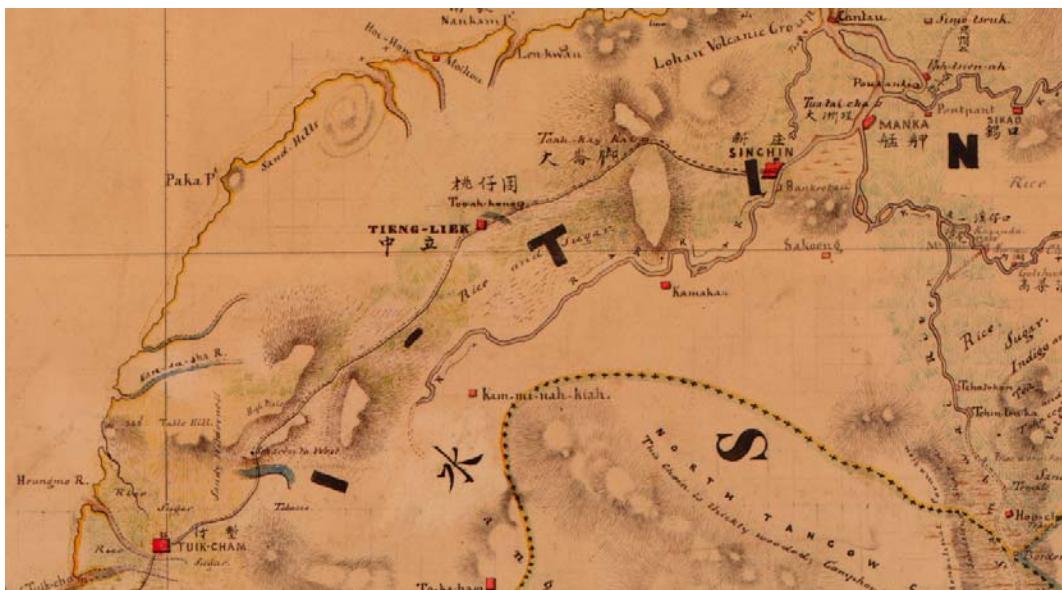
In contrast, administrative geography and central place analysis receive considerable attention in Le Gendre’s mappings of western Formosa. All his mappings make a clear distinction between the region of Chinese settlement and the territory of the aborigines. The Chinese settlement areas are further divided into four districts, as Le Gendre named them: Tai-fang Ting (臺防廳), Loo-kean Ting (鹿港廳), Tamsui Ting (淡水廳), and Kamolan Ting (甲碼蘭廳, 即噶瑪蘭

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<sup>29</sup> It is likely that Kobayashi Eitaku painted the watercolors from photographs that Le Gendre supplied him. For an analysis of these paintings, and the photographs on which they were based, see my unpublished manuscript: “Kobayashi Eitaku’s Paintings in *Notes of Travel in Formosa*.”

廳).<sup>30</sup> In the middle and southern regions of the island, Le Gendre also marked out several sub-districts, in his terminology: Chang-hwa Hien (彰化縣), Kiae Hien (嘉義縣), Taiwan Hien (臺灣縣), and Fung-shan Hien (鳳山縣). At the southwestern coastal extremity of the island, Le Gendre also labeled and color-coded the “District of Liang-kiau” (and in his Chinese equivalent: 琅嶠村庄).<sup>31</sup>

Map legends declare a hierarchy of three distinct types of central places, each represented by a different symbol, as well as a distinction in font size for the place name (or generic term). Those three types of places are: “hamlet or large settlement,” “small town or large village,” and “fortified town.” That hierarchy and those distinctions can be seen on this detail of the manuscript map:



**Image 6: Detail of central places in northern Taiwan, from “Formosa Island and the Pescadores,” manuscript version.**

In western Taiwan, for instance, the “fortified towns” on his 1870 manuscript map include Sinchin (新庄), Tuik-cham (竹塹), Oulan (后蘭, 即後壠), Tyka,

<sup>30</sup> On Le Gendre's maps, he also clearly identified “Pang-hoo Ting” (澎湖廳) in the Pescadores.

<sup>31</sup> Le Gendre's information may have come directly from the writings of Robert Swinhoe. See Robert Swinhoe, *Notes on the Island of Formosa* (London: Frederic Bell, 1863), p. 5.

Chang-hua (彰化), Kagee (嘉義), and Taiwanfou (臺灣府).<sup>32</sup> Finer distinctions in size, fortification, or architecture can also be found on the maps and particularly in his *Notes of Travel in Formosa*. For example, hamlets or villages with gates are occasionally noted, while small towns, large towns and walled towns each have unique meaning in Le Gendre’s central place analyses. In other words, although three types of central places were sufficient for his cartographic representations, Le Gendre’s own observations required much finer differences along the spectrum of central places in western Formosa. Below the hamlet level in areas where he personally traveled, Le Gendre also mapped “joss houses” (i.e., temples), graveyards, charnel houses (i.e., mortuary chapels), and the occasional farm house(s). However, even a casual reading of this latter form of mapping would show that Le Gendre did not systematically record architectural and funerary sites. Likewise, Chinese settler territory left unexplored by Le Gendre included very few references to hamlets or villages, let alone towns or cities, on his physical maps.

## (2) *Topography, the lay of the land*

Mountain peaks and ranges, hills and plateaus, valleys and river torrents, as well as broad agricultural plains all get substantive attention in Le Gendre’s mappings of Formosan space. These markings of terrain and topography are probably the first signs a viewer sees as he glances at either physical map. In these cartographic charts, the “Chinese division of the island” is distinctly bounded on the east by a long chain of hills,<sup>33</sup> with two or three other mountain ranges sketched in further east, inside “aborigine” territory. On these maps, one also notes an additional layer of dark circles representing hills, plateaus or tablelands in those regions of western Formosa where Le Gendre personally traveled. However, coastal topography, plains and river systems beyond Le Gendre’s line of sight are not well represented in any of his mappings, cartographic or textual. Apparently “faithful representations” required personal experience of the land in Le Gendre’s cartographic practice.

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<sup>32</sup> The Chinese characters given here and elsewhere in the text below are the ones found on Le Gendre’s 1870 manuscript map; in some instances these differ from the more common names given on Chinese maps from the same period.

<sup>33</sup> “Sand and clay hills” (with specific geological connotations) is the terminology given to this border between aboriginal settlements and “Chinese Formosa.”

Le Gendre highlighted terrain and topography in his textual report of the north-south 1869 journey, and this mapping suggests a certain pattern in his foci. When approaching or leaving the coast, Le Gendre was anxious to locate and view the sea from land; the ocean was his constant goal of sight. “Accidents” of topography (according to Le Gendre, the products of seasonal flooding or long durée volcanic action), dramatic changes in terrain, and proximity to the western chain of “sand and clay hills” were also obsessively recorded in Le Gendre’s travel journal. Near Changhua in his north-to-south trek, Le Gendre concentrated his efforts on locating the high peaks in the distance to the east, such as Mt. Sylvia, West Peak, or Mt. Morrisson. All of these mountains are carefully noted on his physical maps, and frequently his journal provides compass bearings denoting the angle of sight from his location on the road to those mountain peaks in the distance. Telescopic viewing was another strategy used by Le Gendre to examine the first range of “sand and clay hills” from a distance, as he did at Ching-tong-hang (此同行，即莿桐港).

From this “viewshed data” in Le Gendre’s travel journal, one occasionally gets a glimpse of the emotional circumstances that influenced his apprehension of Formosan landscapes:

Placed among these sand-hills [west of Tangliausau 通照，即銅鑼灣], which are grouped without order over the whole region, our position was much the same as that of a man in the midst of a dense crowd, almost unable to breathe, or to see anything except that which is immediately around him. It was only when we came to the summit of a higher mound than usual, where the breeze had scope for a full sweep, that we could get a glimpse of the surrounding country, and, as in the oases of the African desert, obtain a temporary relief from monotony and suffocation.<sup>34</sup>

Le Gendre, and many travelers like him (including his Chinese counterparts), inspected Formosan terrain from within the confines of a sedan chair. In Le Gendre’s case, the chair was rigged with a “technology” that promoted his obsession with measuring, i.e., marking time, taking compass bearings, computing elevations, and calculating distances:

The route taken on this journey has been laid down on the map from bearings which, from time to time, I took on the way, with a compass, the circumference of the face of which was divided into degrees and half degrees, with sights provided with fine slits, and which rested on a support consisting of a narrow

<sup>34</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, p. 214.

plank placed across my chair. The chair-bearers of China generally walk over the ground with a very regular step, and by calculating the number of steps they would make in a minute according to the speed of their march, and the average length of each, I expected to arrive at as correct an estimate of the distance from one station to another, as is generally obtained in ordinary military surveys.<sup>35</sup>

A comparison of Le Gendre’s pre-trek 31 March 1869 map of Taiwan<sup>36</sup> with the 1870 maps indicates that these distance calculations (i.e., coolie pace multiplied by time passed) and compass bearings were essential for correcting the placement of towns, mountains and other physical phenomena on the later cartographic charts.

Perhaps the greatest difference between the earlier draft map and Le Gendre’s post-trek charts is the emergence of the chain of “sand and clay hills” west of the central mountain range on those later maps. Moreover, Le Gendre’s own presence on the latter maps cannot be mistaken because the route of his north-south trek is clearly marked, supplemented by an increase in the number of named towns, as well as generic “villages” and “hamlets” located along that itinerary. The detailed images below allow one to see such differences.



**Image 7: Le Gendre with notes and maps, from  
“Exploring party under a banyan tree near Ty-ka.”**

<sup>35</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, pp. 192-193.

<sup>36</sup> “Tracing of a sketch of the map of Formosa Island,” enclosure to Le Gendre despatch No. 43, dated 31 March 1869, to J. R. Browne, U.S. Minister, Peking.

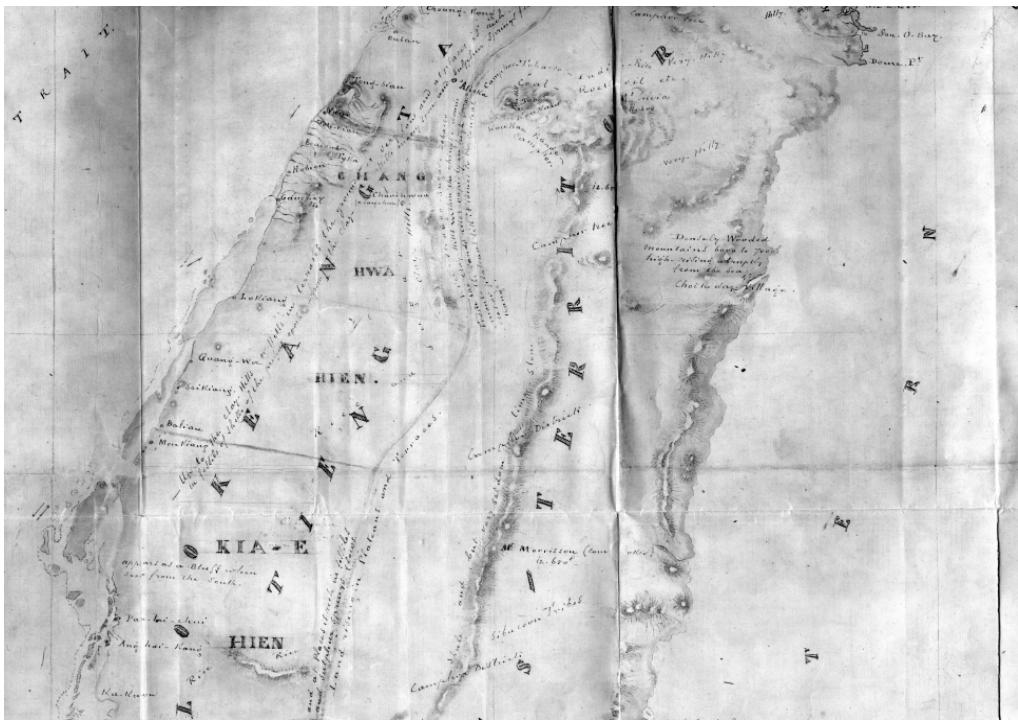


Image 8: Detail of pre-trek map of March 1869



Image 9: Detail from “Formosa Island and the Pescadores,” manuscript version.

### 3. Experience mapped

#### (1) Who guides, who follows?

The particular locations of Le Gendre’s route through western Taiwan in December 1869 were determined by multiple factors. Unlike several of his later European counterparts, Le Gendre did not follow a missionary network. Rather, his European guides were John Dodd and W.A. Pickering, men involved in commerce and resource development. Certainly this explains an overnight stop at Dodd’s warehouse in Tua-tai-cha (大洲埕，即大稻埕) and the several days spent at Kookow (“邱九即永興庄” on his map) inspecting the petroleum well, camphor furnaces and the surrounding area.<sup>37</sup> Comparing the route of Le Gendre’s trek with that of Yao Ying (姚瑩, who traveled in 1821) and other earlier travelers indicates that Le Gendre preferred the well-trodden path of the major south-north road, leaving it only when Dodd’s or Pickering’s interests suggested a different route.<sup>38</sup> Thirdly, one cannot discount the impact of Le Gendre’s local “guides” and sedan chair bearers on his itinerary or his mappings. Reading the travel report of the north-south trek and plotting its data on Le Gendre’s maps in a more detailed fashion enables a different understanding of distance passed and space experienced.<sup>39</sup>

Brief references in Le Gendre’s *Notes of Travel in Formosa* reveal the existence of established “halting places” along the south-north road. Several of these quotes appear in Volume 1:

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<sup>37</sup> Pickering’s impact on the trip is very difficult to pinpoint, for as I noted earlier, Le Gendre did not acknowledge Pickering among his companions, except in the photographic illustration included in *Notes of Travel in Formosa*.

<sup>38</sup> I have benefited greatly from the detailed discussion of the south-north road written by Huang Chih-wei, *Shengdao Tai yixian de gushi* [The First Route of Taiwan] (Taipei: Owl Publishing House, 2002).

<sup>39</sup> For a classical statement of place as experienced space, see Yi-fu Tuan, “Place: An Experiential Perspective,” *The Geographical Review* 65: 2 (April 1975), pp. 151-165. In addition, see Margaret Wickens Pearce, “Framing the Days: Place and Narrative in Cartography,” *Cartography and Geographic Information Science* 35: 1 (January 2008), pp. 17-32 for an innovative attempt to map historical space as it was experienced by an explorer. A follow-up report to this attempt is: Margaret Wickens Pearce and Michael Hermann, “Mapping Champlain’s Travels: Restorative Techniques for Historical Cartography,” *Cartographica* 45: 1 (April 2010), pp. 32-46.

Toah Kay Kai (大嵙腳) is about 9 ½ miles west of Sinchin (新庄) and is a halting place for the coolies. (Vol 1, p. 150)

Alioka (隘寮腳，即公館), one *che* from Kookow, is a large town, and seems to be the camphor depot of the mountainous district. (Vol 1, p. 178)

Then we came to a halting place (1 *che*); after which we entered Bah [Bali? 苗栗] (½ *che*) a large Hakka town supplied with water by an aqueduct, and having a large produce market. Half a *che* further on is another stopping place (2 *che* from Alioka). (Vol 1, p. 178)

We were just one *che* from Tuick-cham, which distance was soon walked over by our coolies, who were tired and anxious to reach their homes. (Vol 1, p. 183)

Occasionally, Le Gendre acknowledged the importance of these nodes in the transportation network when determining where he and his followers chose to stop and rest:

At 3.38 we passed a large joss-house on our right, and soon after entered a good-sized village where I wanted to make a halt; but our guides deterred us from so doing, stating that we could rest much better at a settlement a little further on. (Vol 1, p. 203)

At 3.40 our coolies halted for two minutes, and then started almost on a run towards a hamlet, where they rested from 4.39 to 4.56 (Vol 2, p. 54)

These brief references to halting places and chair-bearers' initiatives suggest that a mere mapping of the central place hierarchy or the coarse administrative geography mentioned above are insufficient means for understanding Le Gendre's experiences of place, which inevitably influenced his mappings of these spaces.<sup>40</sup>

## (2) *Halting spaces, a counter-mapping*

An examination of all the recorded spots where Le Gendre's group halted in December of 1869 is one means of re-presenting this additional layer of experience and knowledge; see Appendix 2 for a detailed listing. Eliminating Le Gendre's starting point (Tamsui) and final destination (Taiwanfu) from the itinerary, there were ten places where Le Gendre and his followers stayed

<sup>40</sup> For an interesting new discussion of 'native mappings,' see Leslie Main Johnson, *Trail of Story, Traveller's Path: Reflections on Ethnoecology and Landscape* (Edmonton: Athabasca University Press, 2010).

overnight. Of these, only five were designated “fortified towns” on Le Gendre’s physical maps, but the remaining five, with the exception of Kookow, were all rather large towns and important nodes on the south-north road (according to Huang Chih-wei’s analysis). During Le Gendre’s eleven days on the road, recorded stops of approximately one-half hour or longer were taken at a variety of places, and only three of those seventeen places were designated a village or town in Le Gendre’s schema of central places. The majority of resting places were associated with some feature of the terrain, such as river shores, summits or bases of hills, tree groves, etc. Fourteen instances of yet shorter periods of halting (approximately 15 minutes at a time) include five villages or hamlets, four terrain-related spots, one tea house, and three indistinct halting places. Therefore, once this entire network of halting spots is mapped onto one of Le Gendre’s cartographic charts, a different notion of the land emerges, much less “man-made” in its constitution.

Granted, this analysis renders only tentative answers to the nature of Le Gendre’s personal experience of Formosan space. On the one hand, the textual record of halting places is incomplete,<sup>41</sup> and Le Gendre seldom describes in any detail which activities were undertaken at these spots. Therefore, we don’t have a substantive understanding of the encounters Le Gendre and his companions had with the spaces they inhabited as they halted between periods of traveling along the road. Furthermore, in his record of the trip, Le Gendre frequently grants himself the initiative in choosing these halting places. Despite these unfortunate limitations, by making this layer of halting places somewhat more transparent on Le Gendre’s mapping of the western region of Taiwan, we animate the trek and reveal the alternative perspectives of place that had been previously concealed on his cartographic charts.<sup>42</sup>

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<sup>41</sup> A critical reading of his travel journal would suggest that Le Gendre was probably a harsh task master when it came to keeping his group of hired laborers on track and moving according to schedule. However, because the frequency of recorded stops is inconsistent from day to day, I believe the record is incomplete.

<sup>42</sup> One simple comparison might suggest the importance of halting-spot perspectives. Whether for bearer or rider, leaving the confines of the sedan chair would enable the viewer to attempt a full 360-degree panorama of the terrain.

## 4. Social and cultural geography

There is a very thin veneer of human geography in Le Gendre's mapping of western Formosa, in great contrast to his treatment of ethnic, physical, and social differences in southern Taiwan. With the exception of brief references to material culture, official prejudices, and social conflict, there is little content of a cultural or social nature in Le Gendre's *Notes of travel* or on his physical maps regarding Chinese settlements. One might explain this apparent indifference by noting that few EuroAmericans demonstrated much interest in Chinese communities on Formosa in their published writings. Rather, they reserved their curiosity for the aboriginal populations, the "Pepohoans" and the "savages."<sup>43</sup> However, Le Gendre's December 1869 trek was taken with the expressed purpose of expanding foreign knowledge of the "Chinese division of the island." Therefore, his failure to report on the Chinese population requires some explanation.

Let me start, though, with what he did say, and what he did record or symbolize on his maps. First, Le Gendre made broad social distinctions among the inhabitants of western Formosa: "Chinese settlers,"<sup>44</sup> Hakka, Peppos, and aborigines. In addition, he borrowed official prejudices that distinguished the Tamsuians from their "Southern neighbors of Loo-Kean Ting" (who were sub-divided into "Chang-hwaians" and "Kiaeens").<sup>45</sup> While this latter split is fundamentally a distinction based on spatial difference, Le Gendre's own apprehension of western Formosan society reveals little in the way of settlement patterns, other than the stereotypical ones associated with Chinese settlers pushing the aborigines inland and latecomer Hakka immigrants settling between "Chinese" on the plains and "aborigines" in the mountains. In other words, there is little in the way of social geography for Western Taiwan in his journal or maps.<sup>46</sup>

<sup>43</sup> I should note here that Le Gendre uses "aborigines" and "Formosans" throughout this section of *Notes of Travel in Formosa* when speaking of the inhabitants of the hills and mountains.

<sup>44</sup> When discussing inhabitants of the Hengchun peninsula, Le Gendre used the term "Fu-Kyen" to designate Hoklo settlers, distinguishing them from Hakka, "half-castes", Peppos and aborigines. See Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 3, pp. 145-146.

<sup>45</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, p. 220; vol. 2, pp. 60-61.

<sup>46</sup> Recall that his maps provide a stark dividing "line of demarcation between portion of the Island occupied by Chinese & that by the Aborigines."

Along the west coast on both of his cartographic charts, Le Gendre inscribed a note that distinguished an additional social grouping: “piratical villages”:

From Fort Kok-si-kon (國聖港) to Sau-o-bay (蘇港口，即蘇澳灣) the Formosan coast is covered with piratical villages.

Because Le Gendre admitted that he had not explored the west coast from Taiwanfu to Tamsui, nor visited any of the ports on the east coast south of Kelung, this generalized spatialization of coastal piracy is not supported by any substantive evidence. However, in his travel report, a more exacting spatial dimension is given to this social phenomena. Armed travelers observed by Le Gendre in several settlements south of Tong-siau, and watch towers discovered by him along the road south of Goomatao (牛罵頭) were interpreted by Le Gendre (with some help from local informants) as evidence of pirate villages lining the coast at both locations. Taken together with his brief references to armed residents at the interior border between Chinese and aboriginal settlements, these spatial propositions reveal a very faint mapping of social conflict zones, apprehended in this case from the perspective of the Chinese (or in Le Gendre’s terms, “Chinese” and “Hakka”) settlers.<sup>47</sup>

More prominent in Le Gendre’s geography of Chinese society and culture in western Formosa are the locations of “joss houses” (i.e., temples), grave yards, “charnel houses” (i.e., mortuary chapels), and farm houses. As noted above, differences in local material culture (in the form of walls, ditches, bamboo enclosures, and the like) were important for mapping out a more detailed hierarchy of central places. However, when tracing these architectural forms and land-use patterns on the rural landscape, Le Gendre was posting claims of a cultural and economic nature. For example, the density of grave yards south of Changhua, and the increasing size of these spaces near Kagee, were cited by Le Gendre as evidence of early Chinese settlement in the region, the intensity of “hard battles” associated with that settlement, and the practicality of the “Chinese, who make use of everything, [and] without remorse turn their cattle to

<sup>47</sup> For a case study of the plundering of Chinese junks, see Lin Yu-ju, “Qingmo bei Taiwan yucun shehui de giangchuan xiguan: Yi Danxin dang’an wei zhongxin de tantao” [The Plunder Practices in the Fishing Society of Northern Taiwan during the Late Qing Period: Evidence from the Danxin Archives], *Xin Shixue* [New History] 20: 2 (June 2009), pp. 115-165.

graze” among the graves.<sup>48</sup> While his association of these graveyards with Changhua, Kagee and regions further south might appear to be a spatial claim, in fact, Le Gendre’s travel journal turned those comments into a substantive critique of Chinese culture *in toto*:

This gives a striking instance of their ideas and prejudices, so directly opposed to our own; for the fact of putting cattle and horses to graze in grave-yards is not confined to Formosa, but obtains throughout the whole Empire; and, in a country like China, where respect for the dead is so great, this would not be allowed if they thought it evidenced the slightest disrespect for the graves.<sup>49</sup>

However, in this section of his physical maps, Le Gendre also posted an additional claim: “[H]ouses cease to be built with bricks made of mud dried to the sun. Mud and bamboo are used instead.” Perhaps Le Gendre was spatializing a fundamental cultural difference in “Chinese settlement” society? His personal interpretation of “Yamen” prejudices may assist me in answering that question.

According to Le Gendre, “Among the officials, the Tamsuians have the name of being more honest, economical and conservative, and less troublesome.”<sup>50</sup> Inhabitants of the “Loo-Kean Ting” (where Le Gendre located all the graveyards), on the other hand, were perceived by officials to be hospitable toward strangers, fond of luxury, and therefore quite troublesome. There were official distinctions among the “Loo-Keanians” too: Kiaeeens were fond of litigation, prompt to accept a quarrel, and emphasized family ties; Chang-hwaians, in contrast, were fond of progress and change. Le Gendre’s interpretations of these “official” prejudices tended to reinforce a fundamental distinction that was explained by topography, soil fertility and geographical location. Accordingly, richer soil in the south enabled a density of settlement not seen further north, and wealth from these two factors generated an appreciation of the “opportunities of enjoying the blessings of life.” Conversely, proximity to piratical villages on the coast and aborigines in the hills explained for Le Gendre the quarrelsome tendencies of the Kiaeeens. Sometimes, though, personal experience of space and community challenged official prejudices and Le Gendre’s explanations of them:

<sup>48</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, pp. 51-52.

<sup>49</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, p. 52.

<sup>50</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, p. 220.

Like the Chang-hwaians, the Kiaueens are very hospitable, and in no part of the island, except among the aborigines, did we experience better treatment than we received from them.<sup>51</sup>

Thus, while Le Gendre might have first registered the ethnic prejudices learned from Qing officials serving in Taiwan, he ultimately re-imposed his own meanings of those spatialized distinctions upon the residents of the “Chinese division of the island.” And here, too, experience mattered.

## 5. Tracing the quality of cultivation

Given the amount of agricultural data in Le Gendre’s travel journal, some of which was also represented on his maps, it is surprising that collecting this type of information was not cited as a major priority in *Notes of Travel in Formosa*. Le Gendre was a constant observer of the type and quality of agricultural production along the route of his north-south trek. On the one hand, he recorded broad assessments of a region’s agricultural productivity:

- “not the slightest traces of cultivation”
- “extensive sandy wilderness”
- “cultivated valley”
- “high state of cultivation”
- “most richly cultivated region that we had seen”

On the other hand, he frequently supplemented those general assessments with more detailed records of crops grown and quantities of production:

- “a great deal of tobacco is raised in the neighborhood”
- “small patches of sugar cane in the hollows”
- “beautiful groves of orange trees to the left”
- “large quantities of tobacco and indigo are raised in these hills”
- “luxuriant fields of rice, sugar-cane, ground-nuts, potatoes, etc.”
- “some very pretty groves of Orange and betel-nut trees”
- “rice and peas were cultivated in abundance”
- “an immense plain planted with sweet potatoes”

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<sup>51</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, pp. 59-61.

Le Gendre began to transfer this collected data onto his large-format map. In the northern half of the island, the map contains both textual references to crops and quality of cultivation (e.g., “Rice and Sugar,” “Sandy wilderness”) as well as color-coded regions of production: green for paddy fields, blue for water-rich valleys, and yellowish-brown for sandy wildernesses supporting little vegetation other than short grass.



**Image 10: Detail of agricultural production data, from “Formosa Island and the Pescadores,” manuscript version.**

Surprisingly, on both of his physical maps, this mapping of local cropping patterns is least abundant in areas south of Tyka where actual agricultural production was greatest. It is impossible to explain why the detailed cropping data included in his travel journal for this southern region was not rendered in color-coded symbolism or textual references on either of his cartographic charts; the travel record proves that he did not lack observed data with which to make those spatial postings.

A detailed record of all references to agricultural production found in Le Gendre’s maps and journal entries related to western Taiwan<sup>52</sup> suggests that Le

<sup>52</sup> Paintings and photographs in *Notes of Travel in Formosa* related to western Taiwan avoid this topic all together, except for images of sugar cane processing and carts / wagons used for transporting produce.

Gendre’s empirical assessment of farming patterns and outputs was far less “scientific” and quantified than his observations of topography and geology. As the quoted phrases above indicate, Le Gendre was able to distinguish between several local crops: rice, sugar cane, indigo, peanuts, peas, tobacco, sweet potatoes, grass, oranges and betel nuts. However, neither his textual descriptions nor his color-coded sketching permits one to reconstruct a detailed mapping of agricultural output across the western region of the island. Perhaps the most important operative word in Le Gendre’s agricultural reporting is “culture” or “cultivation.” Whether paired with a noun indicating terrain (e.g., valley) or a qualifier suggesting comparison (e.g., high, very high), this terminology is perhaps more an indication of Le Gendre’s aesthetic responses to the spaces in which he traveled than it is a scientific assessment of the agricultural production on Chinese farms. If I add on his other references to visual appreciation (e.g., luxuriant, beautiful, or miserable), the case for aesthetic enjoyment rather than quantitative calculation is even more compelling.

Nevertheless, if one compares Le Gendre’s mapping of these agricultural resources with all other reports of foreigners (and perhaps Chinese officials) traveling through western Taiwan in these years, he will find that Le Gendre’s mappings still provide significantly more data on local production than these other records. His notes do make some distinctions among regional production, such as tobacco cultivated by Hakka farmers around Bah, sweet potatoes grown only south of Changhua, or indigo cultivated only in west central Taiwan. Likewise, Le Gendre’s sensitivity to changes in topography, coupled with his references to density (or scarcity) of farm houses and named crops might permit one to reconstruct a color-coded mapping of agricultural production that is much more detailed than the one we find on the northern sectors of his manuscript map.

Finally, although agricultural production did not excite Le Gendre as did local geology, topographical variation and central place networks, the cropping data he posted on his maps of western Taiwan quickly became the new norm for all later Western cartographers of that region.<sup>53</sup>

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<sup>53</sup> See the post-1869 editions of Admiralty Map # 1968, “Formosa Id. and Strait,” for evidence of this fact.

## 6. Historical cartography

Because of Le Gendre's native fluency in Dutch and French or his general curiosity of the past, there is a thin layer of historical cartography in Le Gendre's mapping of Formosan space. To undertake this form of analysis, Le Gendre gathered a set of Chinese and European maps and compared the data he found on these cartographic charts with his own experience of the island's geography and terrain. Apparently Le Gendre sought to employ these materials to undertake an investigation of Chinese and foreign exploration of northern and western Formosa. In the process, however, he also engaged in a comparative analysis of the names and locations (i.e., primarily latitude coordinates) of port cities, inland towns and river routes posted on these earlier Chinese and European maps with those noted in his travel journals and recorded on his own cartographic charts.

Le Gendre's sources for this investigation are a set of maps that would not have been difficult to examine in a good Asian map collection in the middle of the Nineteenth Century. However, it is unclear when and how Le Gendre procured the charts that he employed for this study:

1. "Kaart van het Eyland Formosa en de Eylanden van Pescadores," J. van Braam & G. Onder de Linden.<sup>54</sup>
2. "Province de Fo-kien," map of the Jesuits de Mailla & Henderer.<sup>55</sup>
3. "L'Isle Formose et partie des Costes de la Chine suivant les Cartes et les Observations les plus récentes et entre autres des RR. PP. Jesuites," par N.B. Ing.r de la Marine, MDCCXLIX.<sup>56</sup>
4. "Chang Sue King, Kea king's map of Formosa."<sup>57</sup>

In a few instances, Le Gendre also evoked the most recent version of the British Admiralty map of Taiwan, which was widely available to ship captains, customs officials, and diplomatic personnel in the treaty ports of China during the 1860s:

<sup>54</sup> Le Gendre gave it the date of 1635. This map, or a similar version, was published in François Valentijn's *Beschryvinge van den handel en vaart der Nederlanders op Tsjina . . .* (1726), Book 4, Part 2.

<sup>55</sup> Dated 1712; taken from Jean Baptiste Bourguignon d'Anville, *Nouvel atlas de la Chine* (The Hague: H. Scheurleer, 1737).

<sup>56</sup> Originally published in p. 74, Tome 7 of *Histoire Générale des Voyages*, etc. (La Haye: P. de Hondt, 1749).

<sup>57</sup> Drawn from "Fujiansheng quantu: Jiaqing shiyinian fenyi Zhang Zongjing mojuan Zhili gesheng yudi quantu" [Map of Fujian Province, from *Maps of Zhili and the Other Provinces*, compiled by Zhang Zongjing, 11th year of Jiaqing], (dated 1807).

##### 5. “British Admiralty map No. 1968, Formosa Id. and Strait.”<sup>58</sup>

From his comparisons, Le Gendre concluded that disparate, incomplete and inaccurate geographical data on these earlier maps made it impossible to produce a thorough investigation of Chinese, Japanese and European explorations of and settlements in the island of Formosa: “it is almost impossible to bring an investigation to any definite result.”<sup>59</sup> However, that did not prevent Le Gendre from attempting a series of interesting comparisons. Amidst the narrative of his 1869 north-south trek, Le Gendre engaged in a comparison of the naming and latitude placement of north and west coast towns on the Dutch and Jesuit maps with his own alternatives.<sup>60</sup> Promoting the accuracy of his own cartographic work was but one, unstated goal of these comparisons. More important to his endeavors was plotting the extent of Dutch coastal surveying prior to 1635, while indirectly concluding that historical knowledge of Taiwan’s coastal towns was not broadly shared across two hundred years of European cartographic history.

Not all of this history was an evolutionary account of cartographic progress, however. Le Gendre voiced doubts about the particular charting by British surveyors of two major river courses in central Taiwan two decades before his own visits:

I find that this branch is called the Great Favorlangh (虎尾溪) on a marine chart of Formosa, made by Capt. R. Collinson and Lieut. M. Gordon, R. N., in 1845, and that a portion of its course near the sea is drawn as though it were an independent stream. But I hardly agree with them; yet, as I have no positive proofs that they are wrong, I have marked it on my map as it is on the admiralty charts, simply placing an interrogation point [i.e., a “?”] after its name, to record my opinion that the matter requires further investigation.<sup>61</sup>

In contrast, Le Gendre’s admiration for seventeenth-century Dutch surveying, manifested in the authoritative soundings he noted on the 1635 map by van Braam and de Linden, is easily perceived. Furthermore, he traced the influence

<sup>58</sup> Compiled from the surveys of Captains H. Kellett, R. Collinson, R.N., Lieut. M. Gordon, R.N., J. Richards, E. Wilds and G. Stanley, Masters, R.N., 1867; additions by Commd. Brooker, R.N. 1868. I have examined a later version of this map (c1886), though I have not seen the specific edition that Le Gendre used, probably disseminated in 1869.

<sup>59</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, p. 222.

<sup>60</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, pp. 225, 231; vol. 2, pp. 21, 36, 56-59.

<sup>61</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, pp. 31-32.

of their (and the Jesuits') naming conventions on later European cartography, including placenames for a few port towns on Le Gendre's own charts.<sup>62</sup>

The final element in this historical geography of Le Gendre's creation involves a level of speculation regarding Dutch-aboriginal encounters based on a very limited amount of specifically cartographic data. Here, too, Le Gendre's source is the 1635 Dutch map, and a brief comparison with 18th-century Jesuit cartography. According to Le Gendre's readings, not only did Dutch explorers travel far inland on the central Formosan rivers to trade with the aborigines, but they also stock-piled native goods at the mouths of those rivers on the west coast and shipped them to Fujian, to a port "marked de Goede Storin Bay, where I would now locate Minchu Sound (湄洲海灣)." <sup>63</sup> Analyzing the emergence of new placenames on the Jesuit and Chinese maps, Le Gendre suggested a general history for the post-Dutch settlement of inland towns by Chinese settlers. Finally, comparing population data in a Qing gazetteer with estimates compiled from his own observations, Le Gendre narrated a history of central place development whose central theme resembles a fashionable notion from his own time period: "ontogeny recapitulates phylogeny":

[A]t that time [the 29th year of the Emperor Kien Lung (乾隆)] most of the large towns which are now surrounded by walls were mere villages with bamboo gates like Alioka and other places in our days, and many of the most important villages of the present epoch were then only hamlets or farm-houses sheltering single families.<sup>64</sup>

## 7. Rocks, pebbles, sand and clay: The geological mapping

Despite his unusual accomplishments<sup>65</sup> in assessing Taiwan's natural history, Le Gendre was reluctant to disseminate an authoritative assessment of the island's geology when he wrote up his *Notes of Travel in Formosa* in 1874-5.

<sup>62</sup> See, for example Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, p. 36.

<sup>63</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, p. 56.

<sup>64</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, pp. 218-219.

<sup>65</sup> Historians might naturally think of Collingwood or von Richthofen as the earliest scholars who wrote substantively about Taiwan's geology. However, in my view, Le Gendre's analyses far exceed that of either scholar.

In volume two of that manuscript, Le Gendre stated the reasons for his reticence:

As to the geological aspect of the country between Koo-kow and Taiwanfoo, I have, as yet, refrained from drawing any conclusions. I have thought it best to wait until another inquiry, which I proposed to make in the districts of the Eastern Coast, would be completed; and I have been satisfied with merely recording a series of facts, as the same came under my notice.<sup>66</sup>

Le Gendre never made that other inquiry; he never got the opportunity to examine the geology of eastern Taiwan. However, as I hope to show below, his accomplishments in this field of study, even with regard to the western plains, were hardly just a "series of facts." Le Gendre did establish some impressive, if tentative, conclusions regarding Taiwan's natural history, and his personal travels through the island were essential to supporting those propositions.

As his travel journal demonstrates, Le Gendre's natural history investigations in western Taiwan were primarily limited to inspecting geological formations in river valleys and other spots where rock outcroppings were open to view. His record of geological specimens indicates that he collected rock samples at those places. In the western plains or at the sea coast, he also gathered geological specimens wherever the beds of torrent revealed an interesting (though not always unusual) find. On occasion, Le Gendre adopted an additional means of gathering geological data:

We left again at 4.52, and as we were travelling near enough to the hills on our left to be able to see them plainly with our telescopes, I noticed that they were composed mostly of sand and pebbles, like those between Kookow and Tung-kiang (中港).<sup>67</sup>

Finally, sketching the composition and stratification of geological formations that he inspected enabled Le Gendre to produce detailed geological sections, such as those cited in Section 1 above, which supplemented his reports and cartographic charts.

What, then, were Le Gendre's conclusions regarding the geology of western Taiwan, up to and including the western hills that bordered the central range? And why would they be of interest to readers of his *Notes of Travel in Formosa* or users of his cartographic charts? Firstly, these mappings of mineral

<sup>66</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, p. 170.

<sup>67</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, p. 37.

wealth and agricultural production helped Le Gendre fulfill his consular responsibility of assessing the commercial potential of Taiwan:

[W]e may infer from this and other observations that the island of Formosa is pretty much uniformly composed of the same elements. If this be so, it is very probable that the three great staples, coal, sulphur, and rock oil, may be found all over the island; and these productions, added to those already mentioned, indigo, tea, camphor, etc., would make of Formosa one of the richest lands on the face of the earth.<sup>68</sup>

The “uniform composition” attested to here was based on a comparison of rock samples and geological sections collected in western Formosa with similar data obtained on earlier treks through north, south and south-central regions of the island. In addition, Le Gendre had developed some familiarity with mineral deposits in other parts of the world, and this information helped to inform his claim that Taiwan possessed a great mineral wealth, which had not yet been exploited.

However, there were other goals behind his geological analysis, some of which are better understood as the shared interests of amateur European and North American naturalists during the Nineteenth Century. For instance, records of rocks, pebbles, and sand collected in the beds of torrent in western Formosa might be used to pinpoint the location of Taiwan’s active and extinct volcanoes:

But I have carefully located those places where the productions of extinct volcanoes, such as pumice, trachytes and iron stone, had been brought from the higher regions to the plains, by the streams which we crossed. This will serve the reader in forming a correct idea as to the probable location of these extinct volcanoes in the vicinity of the places where these interesting specimens were collected.<sup>69</sup>

Likewise, Le Gendre’s geological data also enabled him to systematize the locations of a progressive series of hills and mountains distributed across the island, excepting the eastern coast, where he had not personally traveled. We find a statement of this systematic view in the second volume of *Notes of Travel in Formosa*:

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<sup>68</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 1, p. 161.

<sup>69</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, pp. 171-172.

The clay hills exist in the neighborhood of Tamsui, To-ka-ham (大嵙崁) and Chang-hwa; and, together with the sand and pebble hills, they form plateaus, which rise higher and higher, as they near the Central Range. The sand hills are located near the sea-shore. After leaving Toah-Kay-Kai, we saw them as far as Oulan, and then again in the vicinity of Tong-siau (吞宵港), Tyka and Taiwanfoo. The pebble hills, as is easily explained, are more common further in towards the Central Range; and after them come the shale and sandstone hills, such as those seen at Kelung and Koo-kow, which are next to the range.<sup>70</sup>

These were not all of his "facts" or tentative conclusions. Le Gendre did write a short natural history of Taiwan in various portions of his *Notes of travel*, but that is a topic for a separate paper. Important to my discussion here is the fact that underneath his descriptions of contemporary Formosa and below those speculations regarding the earliest foreign and Chinese explorations, Le Gendre laid down a deep layer of natural history as the solid foundation for his other observations. According to Le Gendre's analysis, the western half of the island was much "younger" than its eastern counterpart. In Le Gendre's theory, the formation of the western part of the island occurred in several stages; some were traumatic events while others developed over longer periods of time. Deposits of marine life and materials eroded from the volcanic eastern areas (which had already emerged from the sea) comprised the first layer of "Western Aboriginal Formosa," when that region was still submerged beneath the surface of the ocean. Subsequently, volcanic action in Western Aboriginal Formosa raised the sea bed, and its lava flows created the foundation for the major river valleys in northern Taiwan. Later, the plains in western Taiwan (and at the southern tip) were uplifted by the same volcanic forces that elevated the stratified formations in the north. More recent in time, rivers flowing from the mountains, aided by earthquakes, typhoons and water-spouts, grooved and channeled the western plains. Debris carried west and south from the eastern mountains, aided by the equalizing effect of inundations from the sea, was distributed on the plains, and these sediments soon filled the valleys. This action left heavy sediments closer to the base of the mountains (creating foothills) while carrying the finer particles further to the sea coast. Finally, another series of volcanic elevations of the western plains occurred, followed by yet another retiring of the sea from that region. This is the foundational, natural history of western Formosa that Le Gendre narrated in *Notes of Travel in Formosa*.<sup>71</sup>

<sup>70</sup> Charles Wm. Le Gendre, *Notes of Travel in Formosa*, vol. 2, pp. 172-173.

<sup>71</sup> This summary is primarily based on pp. 20-27, vol 1 of *Notes of Travel in Formosa*.

## 8. Conclusions

Glancing at the large-format, color-coded manuscript map that Le Gendre sketched in 1870 after his north-south expedition, one's attention is immediately drawn to three distinct features of that cartographic chart. Despite the title's focus on "Formosa Island and the Pescadores," this map places the islands into the broader regional context that included the Formosa Strait and the south China coast. In effect, it reminds one of Le Gendre's official duties as U.S. consul stationed in Xiamen and responsible for reporting on developments in Fujian and Taiwan. Secondly, nearly one-third of the total area of that physical map is covered with geological sections, which recorded the geological makeup of various places on Taiwan. Situated in the center and lower left portions of the map, these color-coded sketches serve as a visual balance to the tobacco-leaf tracing of Formosa Island and provide substantive geological data for several regions in that territory. The third imposing characteristic of this chart is the emboldened mapping of Taiwan's terrain data: a progression of hills to the west of center, coupled with two major north-south chains of mountains to the east.

Only two of these three major features were emphasized in Le Gendre's textual and cartographic mappings of the "Chinese division of the island." Although there are a few references to the regional context of Fujian-Taiwan trade or transportation networks in his cartographic discourse, Le Gendre laid down a deep layer of natural history as the foundational "base map" for his other mappings of western Taiwan. Geological data, collected on site and posted to his map, was the foundational layer of that recovered history, and the topographical features so prevalent on his tracing of the island's contours were the contemporary manifestations of that volcanic past. These geological and topographical layers were Le Gendre's real fascination, though only one of them gained authority in post-1870 mappings of the island.

In 1870 Le Gendre's administrative geography was neither complete nor current. If he recognized the general borders of *ting* and *xian* and declared a fundamental division between "Chinese" and "aborigine" territories, those spatializations were of little importance in the larger cartographical schema he applied to the island. This is in stark contrast to the spatial propositions he articulated in 1874 in order to rationalize the Japanese invasion of "aboriginal

Formosa” in southern Taiwan.<sup>72</sup> Central place hierarchy, on the other hand, was much more thoughtfully mapped by Le Gendre, if we combine the symbolized and named data on his cartographic charts with the observations recorded in his *Notes of Travel in Formosa*. A tripartite division of villages, towns and fortified towns was carefully recorded on his physical maps, and Le Gendre’s textual descriptions sub-divided each level further through his references to gates, walls, ditches, and other physical markers of status. Nevertheless, this network of social and economic relations, mapped upon the terrain of western Taiwan, was but one part of the geography that structured Le Gendre’s travels through that region in the late fall of 1869. Some towns he avoided; others were traversed at a rapid pace; while some smaller villages were upgraded in importance by the halting choices of Le Gendre’s sedan-chair bearers. In other words, to re-present a complete and textured mapping of the network of places in western Taiwan that Le Gendre and his companions experienced in the late fall of 1869, one would have to expand and re-calculate the cartographic configuration of his hamlets, villages, towns, and other residential districts. However, few were the maps re-drawn by EuroAmericans after 1870 that gave this element any substantive attention.<sup>73</sup>

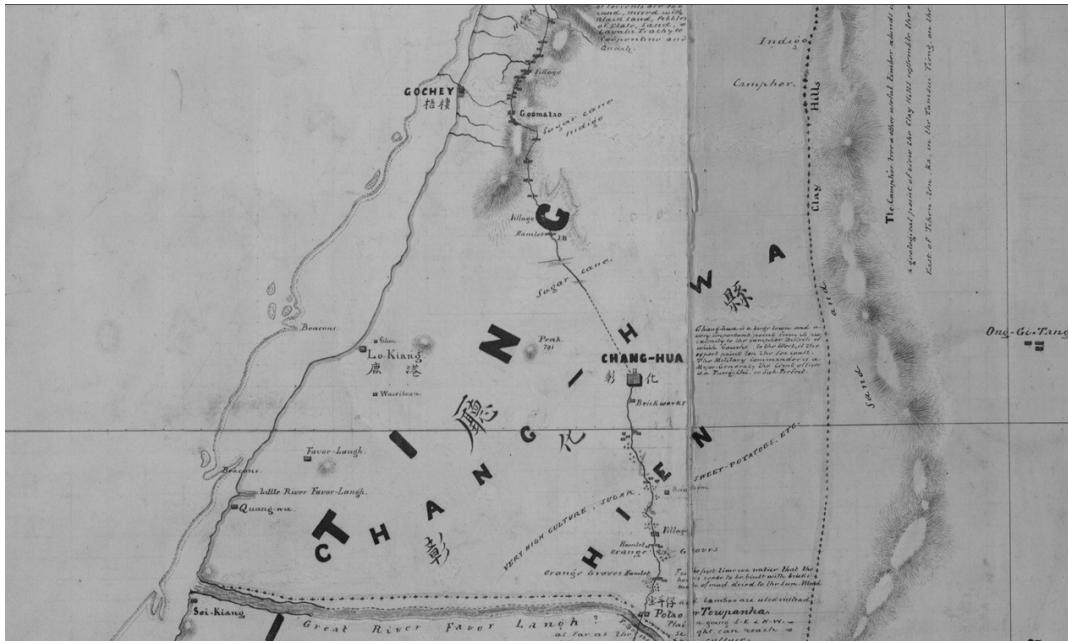
I noted above that Le Gendre constructed a very thin veneer of human geography in his maps and cartographic discourse. It was a hybrid mapping, constituted by personal observations, official Chinese prejudices of Chinese settler society and Le Gendre’s historical imagination of foreign exploration and the violent contestation between Chinese immigrants and aboriginal communities. A second layer of historical memories was constituted by Le Gendre’s comparisons of Dutch, Jesuit and Chinese cartographic data with his own spatial propositions. Cultural or linguistic familiarity or identification might help one explain Le Gendre’s praise for early Dutch surveying, but very little of that Dutch cartographic data was copied onto Le Gendre’s mappings of western Formosa. If maps are “always remade every time they are engaged with,”<sup>74</sup> then Le Gendre’s addition of a single question mark next to the route of the “Great

<sup>72</sup> There is a strong case for Le Gendre’s reterritorialization of Formosan space in 1874, but that is a subject for another paper. The claims he posted in 1874 can be found in the pamphlet he published in 1874: *Is Aboriginal Formosa a Part of the Chinese Empire?* (Shanghai, Hongkong and Yokohama: Lane, Crawford & Co.; Foochow: Hedge & Co.; Amoy: Wilson, Nichols & Co, 1874).

<sup>73</sup> Perhaps the missionary mappings are one alternative to consider here.

<sup>74</sup> Rob Kitchen and Martin Dodge, “Rethinking Maps,” p. 335.

River Favor Langh" remade the meaning of the first British Admiralty map of Taiwan, even as he maintained, in a conservative fashion, the route of that river, which he also doubted. This image testifies to that compromise:



**Image 11: Detail of the 'Great River Favor Langh,' from "Formosa Island and the Pescadores," manuscript version.**

However, postings of geographical and topographical propositions were not the only novel mappings that Le Gendre made in 1870. Despite the brief and incomplete nature of his mappings of agricultural production, this data was novel in the cartographic history of the island. Later in time, missionaries (such as George Mackay) and Japanese colonial officials would publish general and very detailed maps of Taiwan's natural resources and cropping patterns. In 1870, however, Le Gendre's data was extraordinary, even though his textual descriptions of this "cultivation" combined both aesthetic and economic appreciation for this local output. Nevertheless, subsequent official mappings by the British Admiralty faithfully recorded his agricultural data, thereby constituting Le Gendre's spatial propositions as empirical fact. Likewise, Le Gendre's mappings of the hills, plains and river systems in western Formosa, as well as the mountain peaks and contours of the central and eastern mountain ranges, were all reaffirmed in the cartographic charts of the British Admiralty

and others who mimicked those (or Le Gendre's) official charts. The following section of the early 1880s edition of the British Admiralty map of Taiwan is but one example:

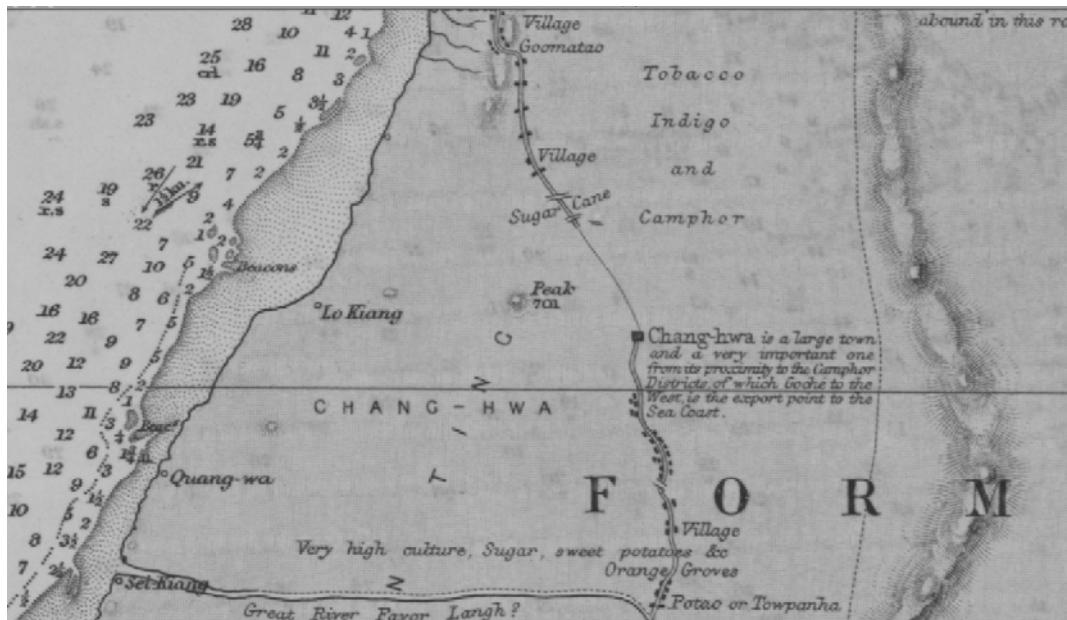


Image 12: Detail of western Taiwan, from the 1886 edition of "Admiralty Map No. 1968, Formosa Id. and Strait."<sup>75</sup>

In this regard, Le Gendre's cartographic charts appear to have attained the status of "immutable mobiles," at least in the late 19th-century official EuroAmerican context.<sup>76</sup>

<sup>75</sup> "Compiled from the surveys of Captains H. Kellett & R. Collinson, R.N., Lieut. M. Gordon, R.N., J. Richards, E. Wilds and G. Stanley, Masters, R.N. 1867. Additions by Comr. Brooker, R.N. 1868." Magnetic variation in 1883. Additions to the topography of Formosa from a map compiled by Gen. Chs. W. Le Gendre, U.S. Consul, Amoy & Formosa, 1870". London, published at the Admiralty Augt. 15th 1886 under the superintendence of Captain G.H. Richards, R.N. F.R.S. Hydrographer. Large corrections Feby. 1873, July '81, June 1886. Sold by J.D. Potter Agent for the Admiralty, 31 Poultry & n King Street Tower Hill. Drawn for Engraving by H. Sharbau, Hydrographic Office. Engraved by Davies, Bryer & Co.

<sup>76</sup> On immutable mobile and the importance of this concept in the history of knowledge production in 19th-century China, see Ch. 5 of James L. Hevia's *English Lessons: The Pedagogy of Imperialism in Nineteenth-Century China* (Durham: Duke University Press, 2003). The concept originated with Bruno Latour; see his "Centers of Calculation," in Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge: Harvard University Press, 1987), Ch 6.

Only Le Gendre's geological sections disappear from subsequent EuroAmerican charts of Formosa Island and the Pescadores. All of the time and energy that Le Gendre devoted to collecting, sketching and analyzing Taiwan's geology seem to have gone unnoticed by his contemporaries. Instead, it was his other cartographic arguments that remained influential. Yet for historians of Le Gendre's mapping practices, the geological layers of his cartographic *work* (i.e., both his activities and his publications) reveal the complex interactions between person and place in the production of cartographic space. If trends in 19th-century natural history research dictated the format and conventions for Le Gendre's geological representations, the "accidents of topography" helped to determine the sites of his investigations. When Le Gendre halted along the north-south road to gather rock samples and sketch geological outcroppings, he left the confines of his sedan-chair (and its directional and distance technology) and experienced the land more fully with his legs and hands. There are indications that the impatience of sedan-chair bearers and the mood of the naturalist influenced this investigative work. Ultimately, however, it may have been Le Gendre's own ambivalence towards this layer of his cartographic work — excited by the volcanic and erosive processes that had created Formosa, but insecure regarding his limited travels across the land—that produced the final contents of his "faithful representations."

## Appendix 1: Placename Glossary

Romanized name	Chinese on Le Gendre's map(s)	Chinese characters frequently used
Alioka		隘寮腳
Bah [Bali?]		苗栗
Chang-hua	彰化	彰化
Chang-hwa Hien	彰化縣	彰化縣
Ching-tong-hang	此同行	莿桐港
Fort Kok-si-kon		國聖港
Fung-shan Hien	鳳山縣	鳳山縣
Goomatao		牛罵頭
Great Favorlangh		虎尾溪
Hung-mo (Heung-mo) River		紅毛港溪？或當年頭前溪的支流？
Kagee	嘉義	嘉義
Kamolan Ting	甲碼蘭廳	噶瑪蘭廳
Kelung	雞籠	基隆
Kiae Hien	嘉義縣	嘉義縣
Kookow	邱九	邱苟，即今出礦坑附近
Liang-kiau	琅嶠村庄	琅嶠
Loo-kean Ting	鹿港廳	
Minchu Sound		湄洲海灣
Mt. Morrisson		玉山
Mt. Sylvia		雪山
Oulan	后蘭	後壠
Pang-hoo Ting	澎湖廳	澎湖廳
Pescadores		澎湖群島
Sau-o-bay	蘇港口	蘇澳灣
Sinchin	新庄	新庄
Tai-fang Ting	臺防廳	
Taiwan Hien	臺灣縣	臺灣縣
Taiwanfoo	臺灣府	臺灣府
Taiwanfou	臺灣府	臺灣府
Takao	打狗	打狗
Tamsui	淡水	淡水
Tamsui Ting		淡水廳
Tangliausau	通照	銅鑼灣
Toah Kay Kai	大嵙脚	大嵙脚，今林口以南
To-ka-ham		大嵙崁／大姑陷
Tong-siau	吞宵港	通霄
Towpanha (Potao)	宝斗仔	寶斗仔，北斗，今彰化縣北斗鎮
Tua-tai-cha	大洲埕	大稻埕
Tuick-cham		竹塹
Tung-kiang	東港既中港	中港
Ty-ka	大甲	大甲
Ung-kang-bay		茅港尾
West Peak		嘉里山

## Appendix 2: Le Gendre's Halting Spots

1. Tau-tai-Cha spent the night at Dodd's tea preparation factory
2. Kamakan Toah-kay-kai (hamlet on summit of hill; halting place for the coolies); halted for 30 minutes
3. To-ah-hong halted for 30 minutes
4. Tieng-Liek spent the night
5. tea-house, 1 hour & 45 minutes from Tieng-liek; halted for 1 hour
6. river bed shore, 1 hour & 45 minutes from Tuik-cham; halted for 1 hour
7. Tuik-Cham spent the night
8. [hilltop] 1 hour from Tuik-cham; halted for 25 minutes
9. foot of hills  $\frac{1}{2}$  hour before Heong-san; halted for 30 minutes
10. south shore of Cheong-san River; halted for "short time" [but perhaps 30 minutes?]
11. Oulan spent the night

[Short record from earlier section of *Notes* for an overlapping segment of the trek]  
He halted at Bah for the night on his earlier trip to Kookow.  
He apparently halted at Alioka on the return leg of his earlier trip.  
He may have halted at Bah on the return, too.  
There was another halting place north of Bah, but I don't know if he stopped there.
12. Kookow spent the night
13. entrance to Kookow Gorge; halted 25 minutes to investigate trade depot
14. Tangliausau halted for 12 minutes
15. hills 23 minutes north of Tangliausau; halted for 30 minutes
16. village 50+ minutes northwest of Tangliausau; halted for "short time" (maybe 15 minutes)
17. hills 1  $\frac{1}{2}$  hour northwest of Tangliausau; [halted briefly? to] obtain a geological section
18. comfortable house perhaps 1 hour northeast of Tongsiau; halted for 27 minutes
19. [passed through Tongsiau]
20. tea house 20-40 minutes south of Tongsiau near the sea; halted for 15 minutes
21. [passed by a good-sized village]
22. settlement (chosen by guides) 1 hour south of tea house; halted for 5 minutes
23. village 15 minutes further south [halted briefly to determine position of West Peak]
24. Tyka spent the night
25. 27 minutes southwest of Tyka; halted for 23 minutes; took bearings of three hills to east
26. south bank of 大甲溪, 52 minutes southwest of Tyka; collected samples of pebbles
27. hamlet south of 大甲溪, about 1 hour southwest of Tyka; halted for 14 minutes
28. [passed through Goomatao]
29. village 1<sup>+</sup> hour south of Goomatao; halted for 9 minutes; measured sugar cane
30. charnel houses very close to last halting spot; halted for 22 minutes
31. village 2 hours north of Chang-hua; halted for unspecified time
32. south shore of 大肚溪, perhaps 1  $\frac{1}{2}$  hours north of Chang-hua; halted for short while
33. Chang-hwa spent the night
34. immediately south of Chang-hwa; halted five minutes for bearers to get breakfast
35. grave-yard 1 hour south of Chang-hwa; halted for 25 minutes
36. second small river 1 hour & 22 minutes south of Chang-hwa; halted for 28 minutes

37. groves of orange trees 2 hours & 20 minutes south of Chang-hwa; halted for 30 minutes
38. orange groves 17 minutes north of Towpanha; halted for 12 minutes
39. Towpanha halted for 30-35 minutes
40. south side of great Favorlangh riverbed; halted for 26 minutes
41. south side of middle channel of Punkam river; halted for 10 minutes
42. south shore of these riverbeds; halted for 7 minutes
43. Ching-long-hang spent the night
44. houses 45 minutes south of Ching-long-hang; halted for 17 minutes
45. banyan tree 25 minutes north of village with a gate; halted for 11 minutes
46. joss house in village with a gate; halted for 2 minutes
47. 23 minutes south of village with a gate; halted for 13 minutes
48. south shore of dry stream 1 hour south of last halt; halted for 12 minutes
49. village 22 minutes further south; halted for 17 minutes
50. large village 3 hours north of Kagee; halted for short while
51. village 2+ hours further south; halted near school-house for 3 minutes
52. Kagee spent the night
53. 40 minutes south of Kagee; halted for 9 minutes
54. south side of betel-nut tree grove; halted for 8 minutes
55. 1+ hour further south; halted for short while
56. small stream 1 hour further south; halted for while
57. 1 hour further south; halted for 18 minutes
58. bamboo bridge 2 hours north of Ung-kang-bay; halted for 15 minutes
59. spot 1 hour 33 minutes north of Ung-kang-bay; halted for 2 minutes
60. hamlet 36 minutes north of Ung-kang-bay; coolies chose to halt here for 17 minutes
61. Ung-Kang-Bay spent the night
62. 45 minutes south of Ung-kang-bay; halted for 14 minutes
63. 1 hour further south; halted for 7 minutes [but they also took a view here!]
64. 40 minutes further south; halted for 9 minutes
65. field 2 hours further south; halted for few minutes
66. 40 minutes further; halted near small creek
67. Reached Messrs. Elles and Co.'s residence

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# 一塊高度開發的地帶： 李仙得 1869-1870 年之臺灣西部圖譜

費德廉

## 摘要

1869 年底，駐廈門的美國領事李仙得從淡水港出發，南下一直走到臺灣府城，一路上並詳細地調查臺灣西部的地理、地質等情況。其視察成果，紀錄在李氏的未刊稿《臺灣紀行》，以及他手繪的「臺灣與澎湖群島輿圖」。本論文利用收藏於美國國會圖書館的李氏手稿、手繪地圖和這兩項原始資料所附帶的照片與地質圖片，探討當時李仙得如何替福爾摩沙島的「華人地帶」製造各種形式的圖譜，建立可能是當時歐美人士最詳細的「臺灣知識」。

本研究有兩個重點：第一，分析李仙得調查、紀錄，以及敘述（包括文字、地圖與圖像方式的描繪）臺灣西部平原與丘陵地帶地形和地方社會的工作過程。第二，討論透過此調查與紀錄過程所製作的成果，即李氏留給後代的彩色臺灣輿圖、地質圖像、文字描繪之表徵等。李仙得的製圖論述、實地接觸經驗，以及如何有系統地製造與傳播其「西部臺灣知識」，都是本論文探討的課題。本研究除了專門探討李氏繪製的城鎮與鄉村地理、清朝行政區域、農業資源分布、地方社會與文化現象等題目，也試圖透過李仙得對其路上停留之處的紀錄，探討他與雇傭的苦力、攝影家與嚮導，如何經驗當地的地勢與村民。李仙得偶爾也比較十七、十八世紀歐洲人的臺灣地理知識與自己的認知，對此課題本論文亦有初步的分析。論文最後一段則說明李仙得的「臺灣西部圖譜」，如何影響往後歐洲與美國官方人士繪製與傳播的臺灣地理知識。

**關鍵詞：**地圖、製圖學論述、歷史地理、自然史、地質學、知識建構、福爾摩沙、  
十九世紀、反製圖

