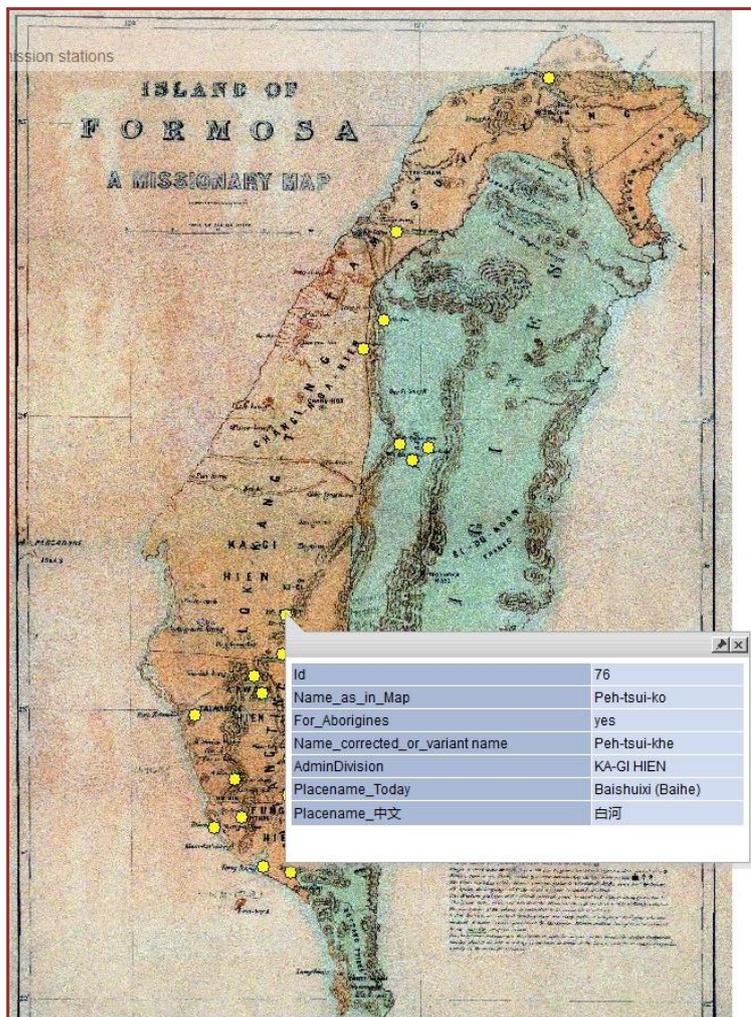


Andreas Kunz
Editor

The Taiwan Missions Project

Historical GIS of Mission Stations
in Formosa / Taiwan, 1865 - 1945



Mainz 2022

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Historical GIS of Christian Missions and Churches
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- [1875 \(A Missionary Map\)](#)
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- [1895 \(The Mackay Map\)](#)
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- [1865-1895 \(GIS Compilation 1\)](#)
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- [1865/95-1945 \(GIS Compilation 2\)](#)
- [Information and Sources \(PDF-Doc\)](#)

Missionary Travel

- [1871-1874 \(Campbell's Travels\)](#)
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Andreas Kunz (*Editor*)

The Taiwan Missions Project
Historical GIS of Mission Stations
in Formosa / Taiwan, 1865 -1945

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Introduction

The “Taiwan Missions Project” is an attempt to use historical maps as a source for modern historical-geographic analysis. Using a Geographic Information System (GIS), historical maps compiled in the second half of the 19th Century have been scanned and georeferenced by using modern world geo-coordinates. This enables the user to work with the data in WEB-GIS environment, or employ this data as complimentary tools in GIS maps like ArcMap (ESRI) or GPS-embedded global electronic maps like Google Earth and Open Street Map.

Thematically, this project focuses on maps compiled by missionaries in Formosa/Taiwan during the second part of the 19th and the first half of the 20th centuries. It is well known that missionaries were very much engaged in the geographies of their resident countries and regions. In the case of Taiwan it can be stated that it were in fact missionaries who laid the foundation for a modern geography of the interior of the island, only the coastlines being explored and sketched by seafarers. In doing so, the missionaries of Taiwan developed their own language Peh-oe-ji (POJ) – a Romanized version of the Southern Min dialect of classical Chinese. This helped them in using the maps among each other and with members of their Missions, whom they trained in the reading of this language. But since POJ is not an active language today, the maps need translation to be useful to today’s reader. This holds true above all for geographic place names: Thus, a great proportion of the “Taiwan Mission Project” was to create a Gazetteer (i.e., an index/dictionary of geographic place names) and store it within a modern GIS system. Altogether 113 Mission Stations were found to have existed in Taiwan during this period, it is hoped that our Project has linked them to modern times and thus made them historically relevant.

This booklet is meant to provide an overview of what essentially has been an online project. In the **first part** (pp. 2-18) the seven maps used are introduced and can be seen in their original and georeferenced version. The **second part** (pp. 18-22) focuses on two compilations of the map data at the GIS-level, the first covering the Qing Chinese period 1865-1895, the second including the Japanese period to 1945. In the **third part** (pp. 22-26) methods of “deep mapping” are employed to create travel maps of two leading Taiwan missionaries, in which their own maps are fused with literary descriptions from their published books. Lastly, the **fourth part** (pp. 27-29) gives an impression of what can be done by interfacing the Taiwan-Missions-Data with an online geographic system like Google Earth.

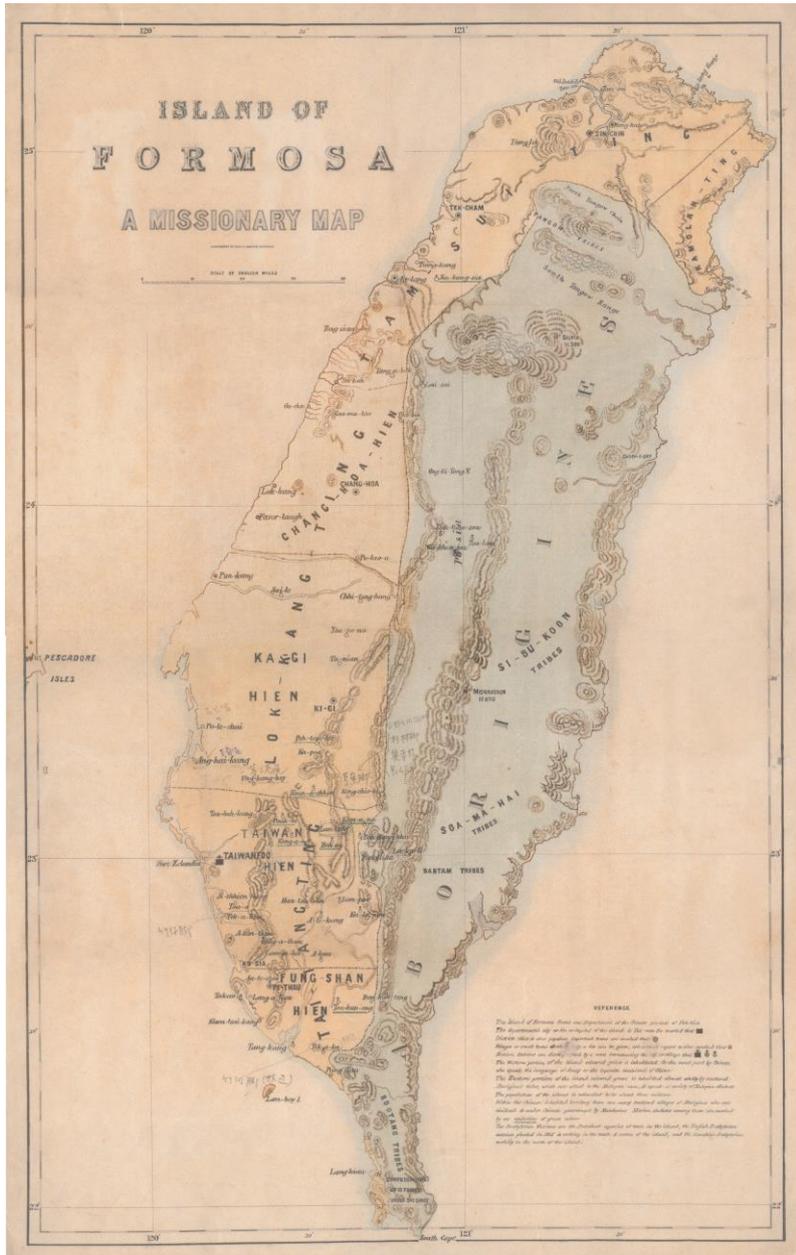
It goes without saying that the online version of this Project, held at *digihist.de*:

<http://www.digihist.de/html/missions/welcome.html>

is a necessary companion to this printed version. As the address indicates, the reader of this booklet is more than *welcome* to visit the page!

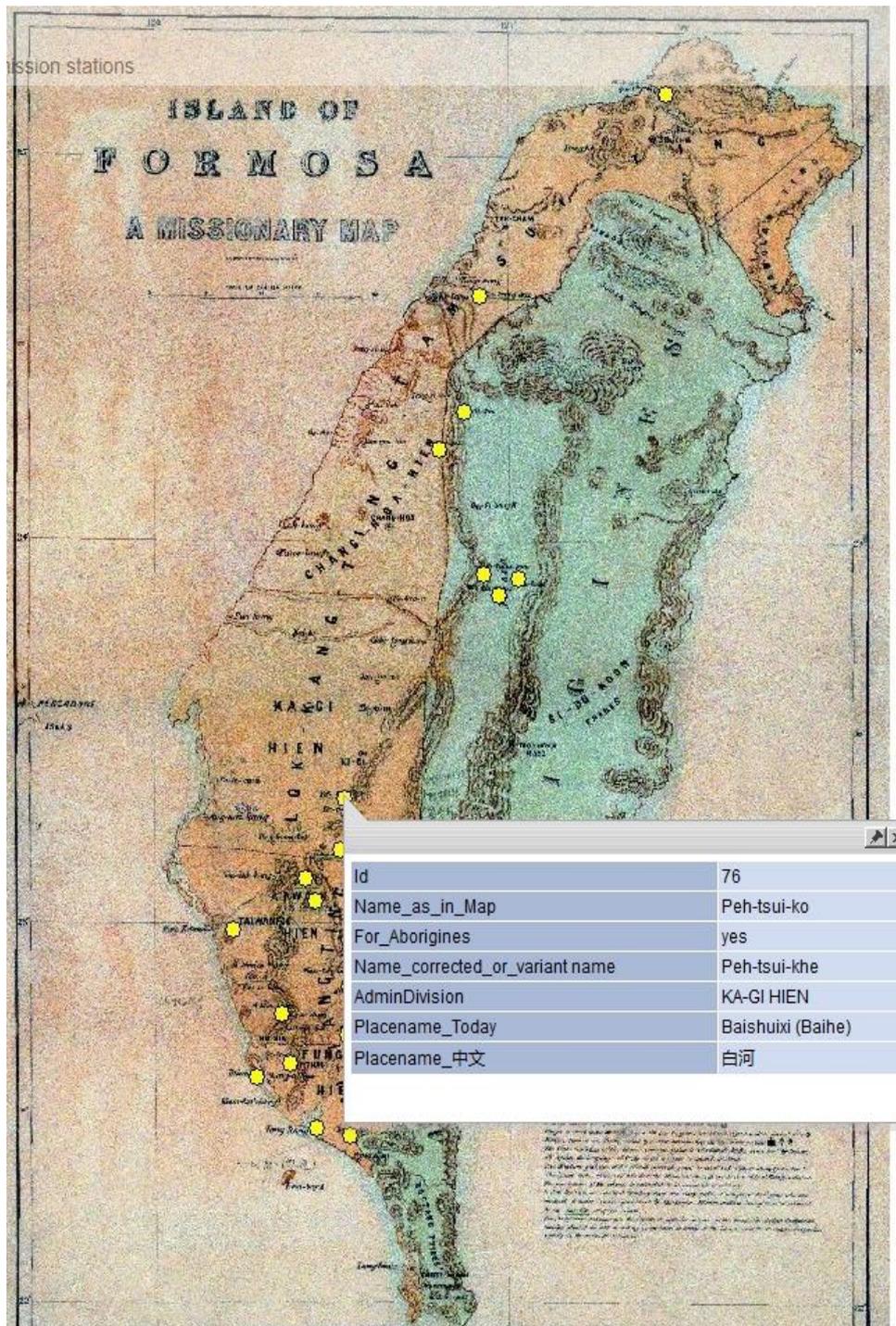
Andreas Kunz, Mainz, March 2022.

Map 1: 1875 (A Missionary Map)

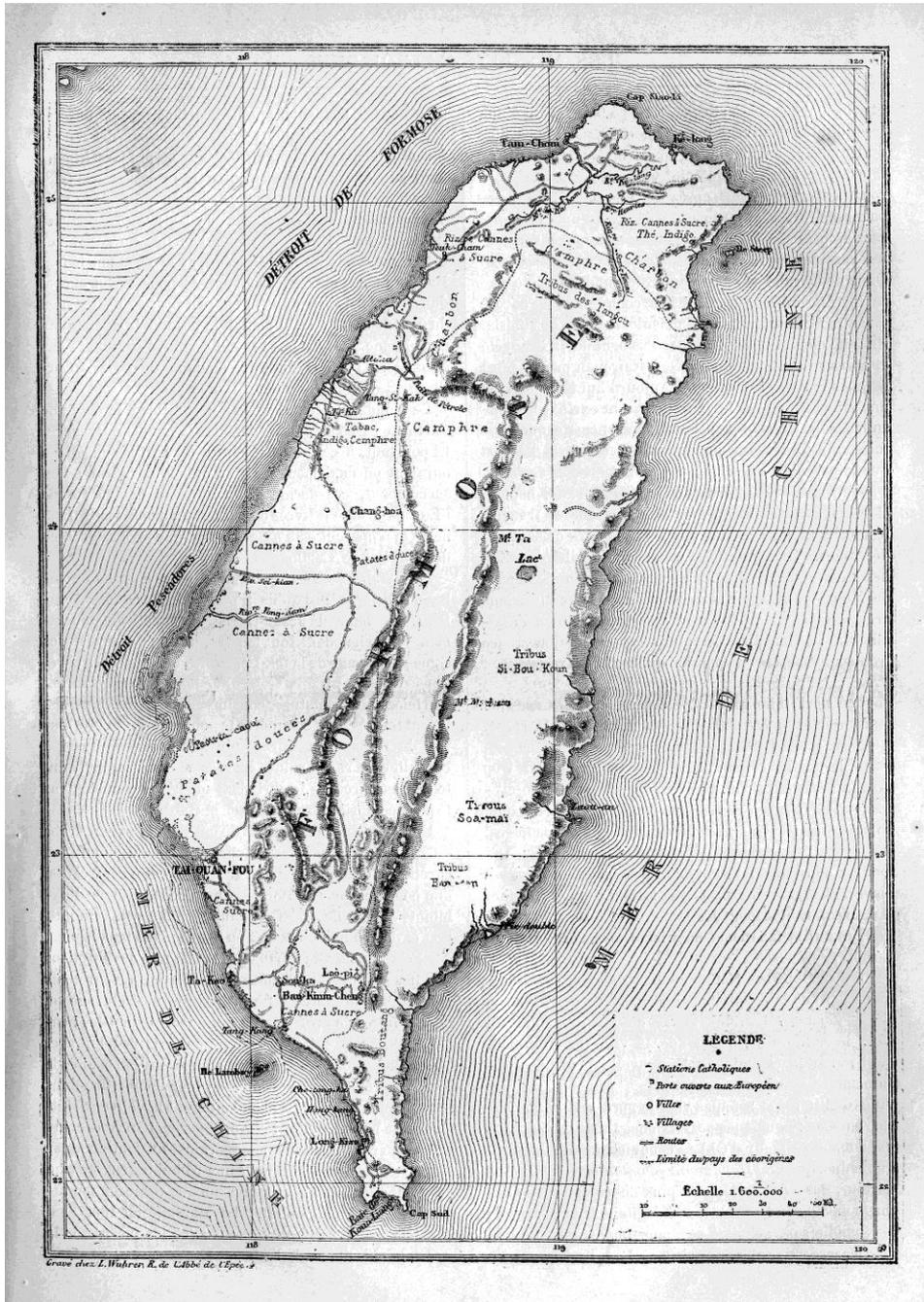


The Map was printed as a lithograph in Scotland by Johnston Publishers, Edinburgh, 1875 (?). Its data was most probably compiled by the English/Scottish Presbyterian Mission of Taiwan Fu in Formosa. The map shows the island of Formosa (Taiwan), divided into districts (*HIAEN*) in the west and into one non-divided "aboriginal territory" in the east. Mission stations are marked as a place with a cross on top in the signature. Additionally, those stations pertaining primarily to "aboriginal tribes" (indigenous people) rather than to Chinese settlers are underlined in green color. Altogether 26 stations are graphed on the map, of which 13 are marked as having been used for "aborigines" (indigenous people). According to the map's legend, all stations displayed in it were founded in or after 1865, i.e. between 1865 and 1875.

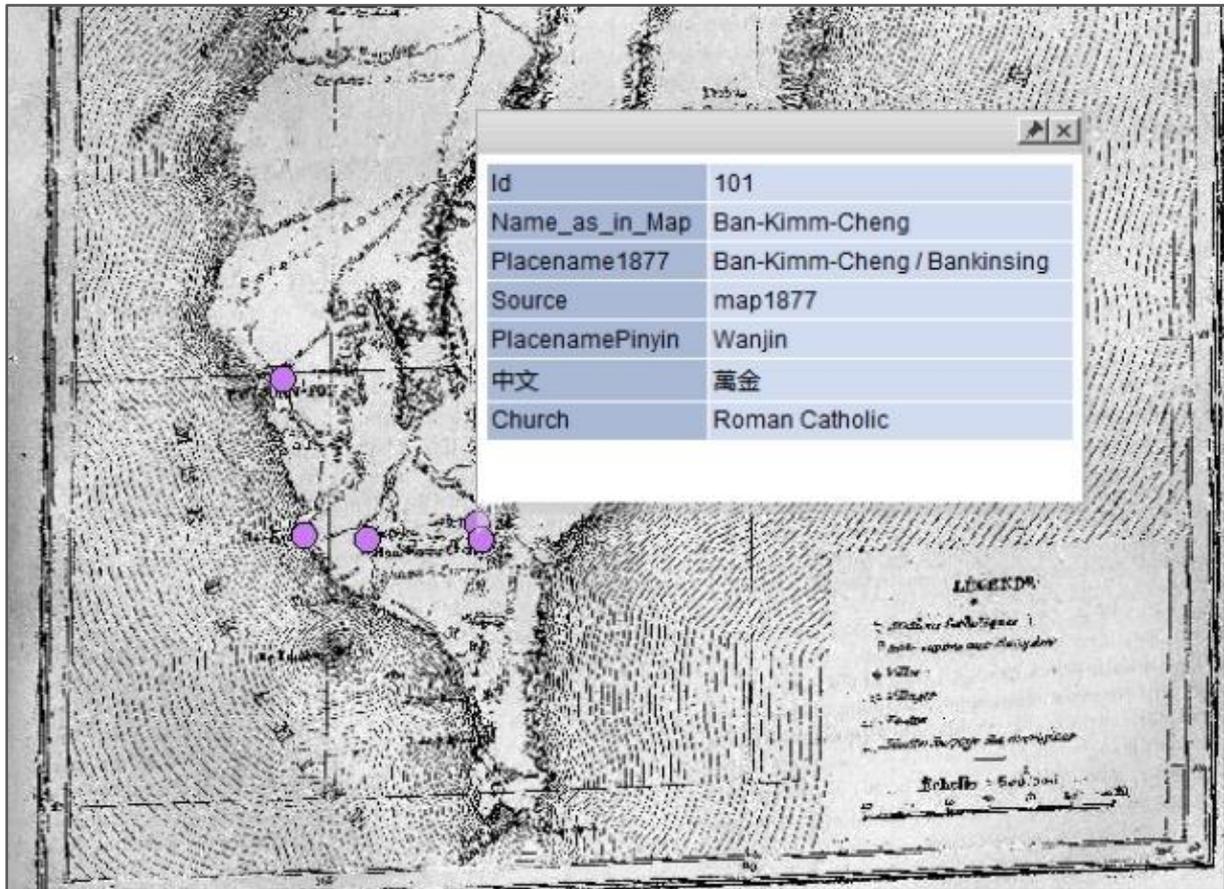
Map 1: The interactive GIS-Version



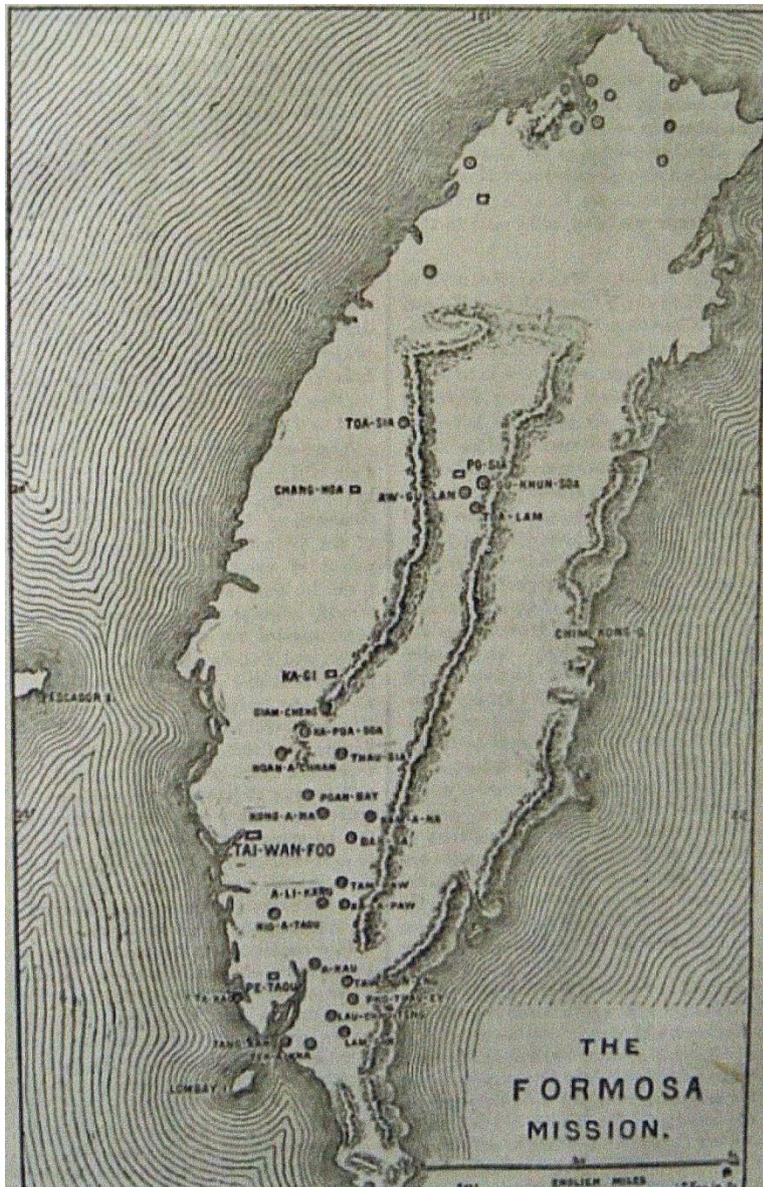
The interactive GIS-Version of Map 1 has been georeferenced in order to be placed on a modern electronic map of the world (like Google Earth). In addition, data on 26 mission stations existing in 1875 has been added to the yellow dots and can be “visited” interactively by the user. Place name data of the original map has been connected with present-day geographic names, in Romanized versions (Taiwanese, POJ) as well as in Chinese (Pinyin and classic Mandarin). It is indicated if the station was especially founded for aboriginal peoples.

Map 2: 1877 (A Catholic Mission Map)

The untitled map depicts Roman Catholic mission stations in Taiwan for the year of 1877. The map was produced by the Paris engraver Louis Wuhrer and published in the journal *Les Missions Catholiques* No. 426 (3 Août 1877), p. 375, as part of a multi-section essay on Catholic mission work in Formosa. The sketch map depicts mountain ranges and the coast line of the island, as well as plants grown in the various regions. It shows the ports open to Europeans. Four cities or villages have been marked with a cross, as depicted in the legend, showing the existence of Catholic mission stations there.

Map 2: The interactive GIS-Version (excerpt)

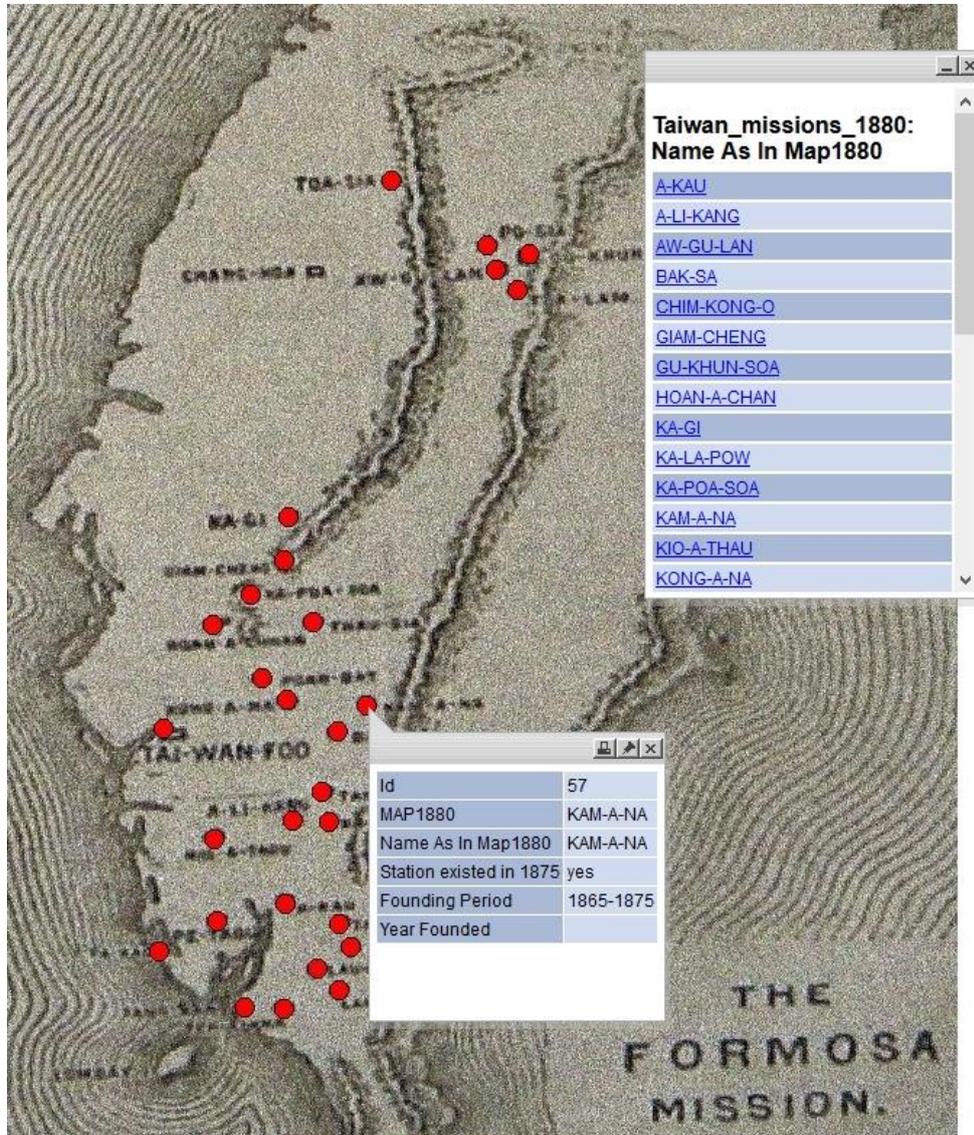
The interactive GIS-Version of Map 2 has been georeferenced in order to be placed on a modern electronic map of the world (like Google Earth). In addition, data on 6 Catholic mission stations existing in 1877 has been added to the purple dots and can be “visited” interactively by the user. Place name data of the original map has been connected with present-day geographic names. It becomes visible when a place is visited on the map, in this case “Ban-Kimm-Cheng” The place name of the original map has been connected with present-day geographic names, in Romanized versions (Taiwanese, POJ) as well as in Chinese (Pinyin and traditional Mandarin). Not shown on this excerpt map is Kelong in the north, where a short-lived Catholic mission station existed in 1877.

Map 3: 1880 (A Presbyterian Mission map)

The map entitled “The Formosa Mission” was printed in “*The Messenger and Missionary Record of the Presbyterian Church of England*” (new series, 5, June 1, 1880), p. 154. As in the previous two maps, the island is displayed as a mere sketch map, with coastal lines and a rather rough sketch of the major mountain ranges. However, 29 stations of the Presbyterian Mission of Formosa existing in 1880 are shown and named in the map. Only one of the places shown in the map – Chang hoa – did not have a Mission station at that time.

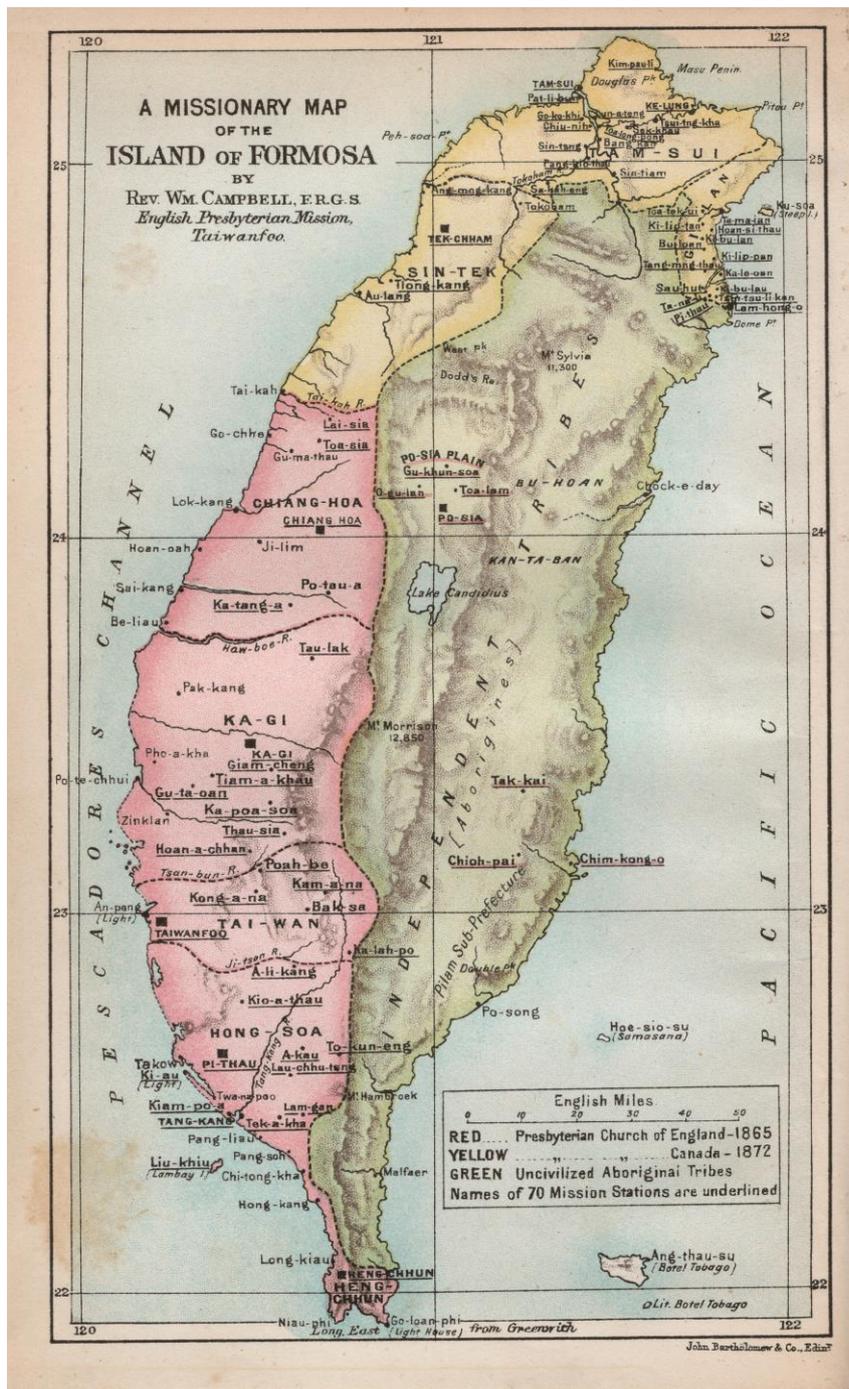
Because of its publication in an official record of the Church, this map may be regarded as a reliable source and represents the extension and (albeit roughly) the geographic placement of English Presbyterian missions stations in 1880. Those stations established by the Canadian Presbyterian Church in the north are not shown in this map, however

Map 3: The interactive GIS-version



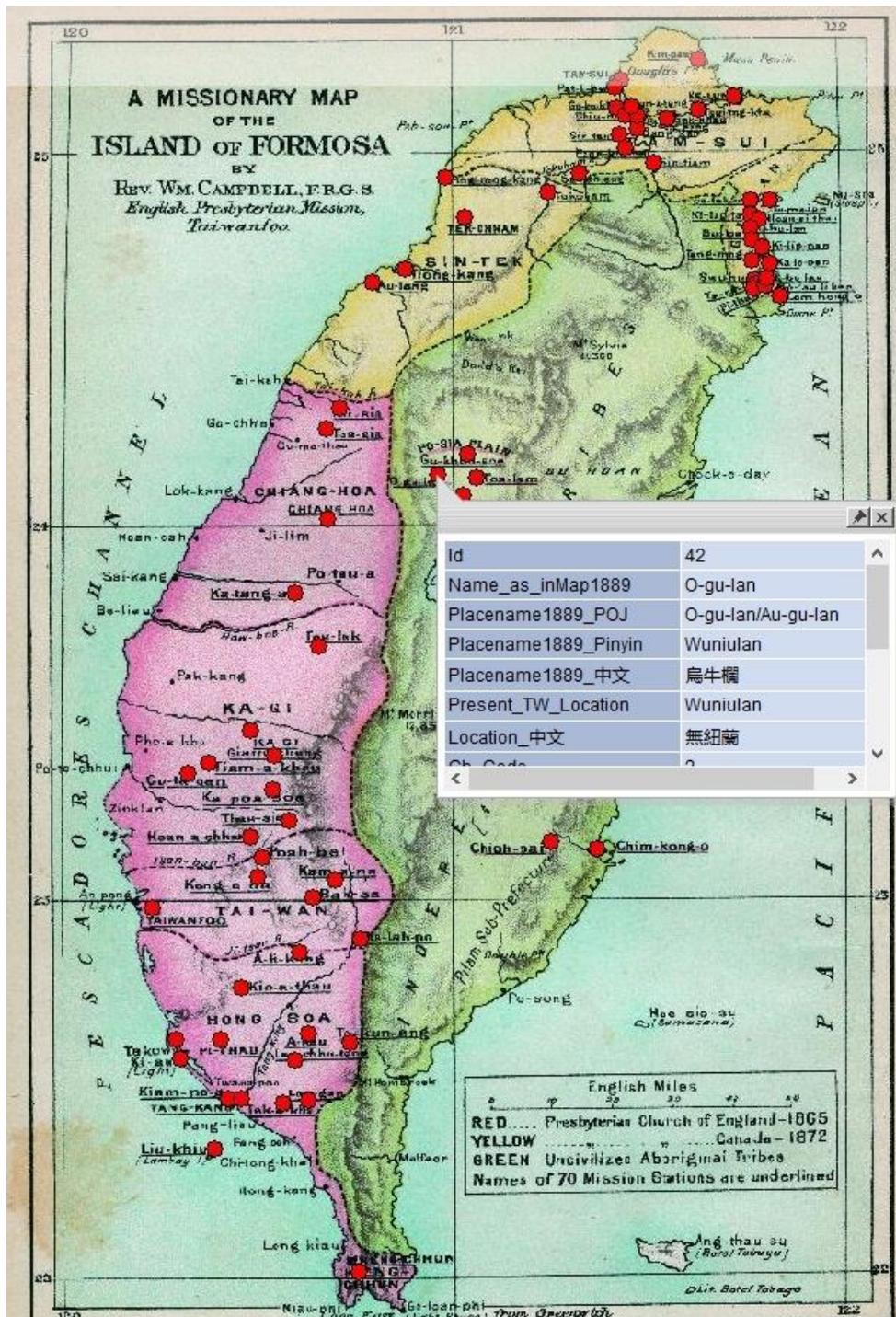
The interactive GIS-Version of Map 3 has been georeferenced in order to be placed on a modern electronic map of the world (like Google Earth). In addition, data on 29 Presbyterian mission stations existing in 1880 has been added to the red dots and can be “visited” interactively by the user. Place name data of the original map is provided as “Name As In Map 1880. Further information on the station’s existence in 1875 and on its founding period is shown as well.

Map 4: 1889 (The Campbell Map)

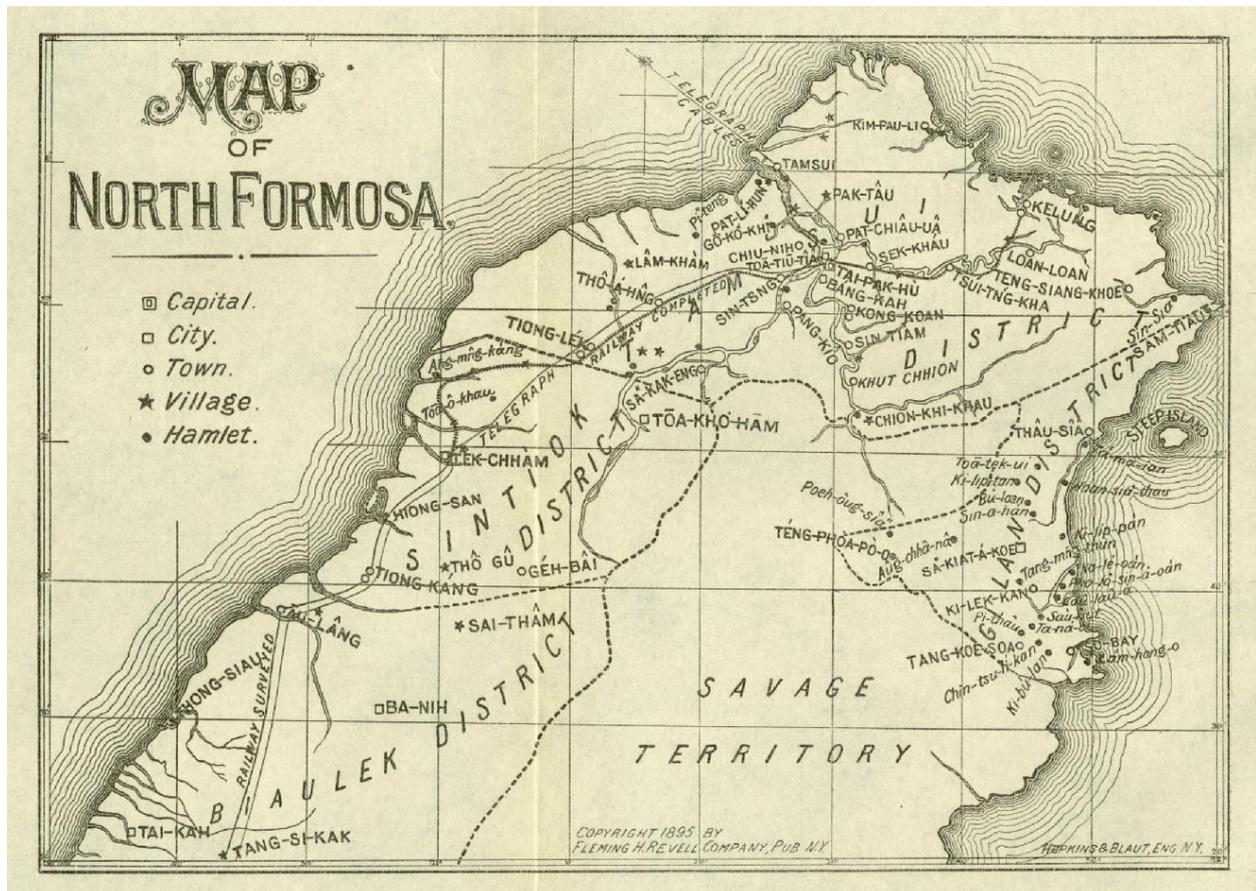


The map, entitled “A Missionary Map of the Island of Formosa”, was published in 1889 as a frontispiece to Volume 2 of William Campbell’s *An Account of Missionary Success in the Island of Formosa* (London, 1889). Campbell, who was a missionary and a leading figure of the PCE at Taiwan-fu at the time, also signed as the compiler/author of the map. A geographer by training (at the University of Glasgow) and a member of the Royal Geographical Society of London, Campbell emerged as a leading cartographer of Formosa/Taiwan. The 1889 map was engraved in Scotland by John Bartholomew & Co. (Edinburgh).

Map 4: The interactive GIS-Version

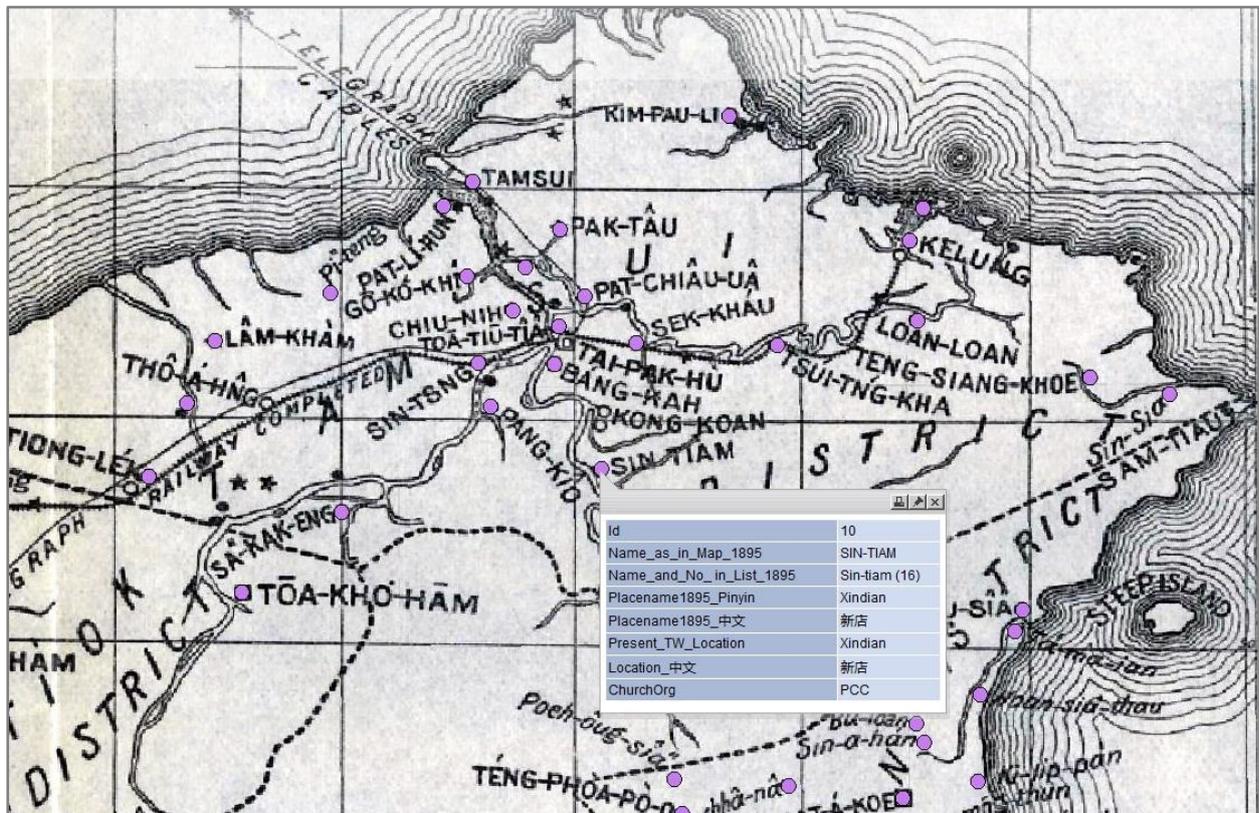


The interactive GIS-Version of Map 4 has been georeferenced in order to be placed on a modern electronic map of the world (like Google Earth). In addition, data on 74 Presbyterian mission stations existing in 1889 has been added to the red dots and can be “visited” interactively by the user. Place name data of the original map has been connected with present-day geographic names, in Romanized versions (Taiwanese, POJ) as well as in Chinese (Pinyin and Mandarin). Next to place name data other important data has been attached to each location, like the geocodes and the administrative environment. Altogether, the 1889 map provides the backbone for the fused GIS version of the entire period 1875-1895.

Map 5: 1895 – The Mackay Map

The map entitled “*Map of North Formosa*” was published in George Leslie Mackay’s book *From Far Formosa*, London, New York, Toronto 1896, opposite to page 153. The map, engraved by the New York firm Hopkins & Blaut, apparently was also published separately from the book. As indicated by the title, the map shows the northern region of Formosa / Taiwan, more precisely the historic districts of Biaulek, Sintioik, Tamsui and Gilan, as well as the northern portion of the so-called “Savage Territory”. The Mackay area roughly coincides with the area marked in yellow on the Campbell map, i.e. shows the region in which the Presbyterian Church of Canada (PCC) was active. Aside of rivers, telegraph and railway lines existing in 1895 are shown as well. The year 1895 marks the transfer of Taiwan from Chinese to Japanese rule and would thus lead to an end of organized missionary explorations by the Presbyterian Church. Above all, the map depicts populated places, ranked and given symbols as “Capital, City, Town, Village, and Hamlet. Names are again given in POJ. Unfortunately there is no symbol identifying a place in the map as a Mission Station. Fortunately, though, in his book (p. 335) Mackay presents a list of 60 chapels (i.e., mission stations), which he calls “complete” and which is considered to be authoritative in the scholarly literature. The place names given there were correlated with those depicted in the map. All except three (nos. 43, 47, 56) could be found and matched. Some locations have been “added to map” to allow for the matching with the Mackay-List.

Map 5: 1895. The interactive GIS-Version (excerpt)



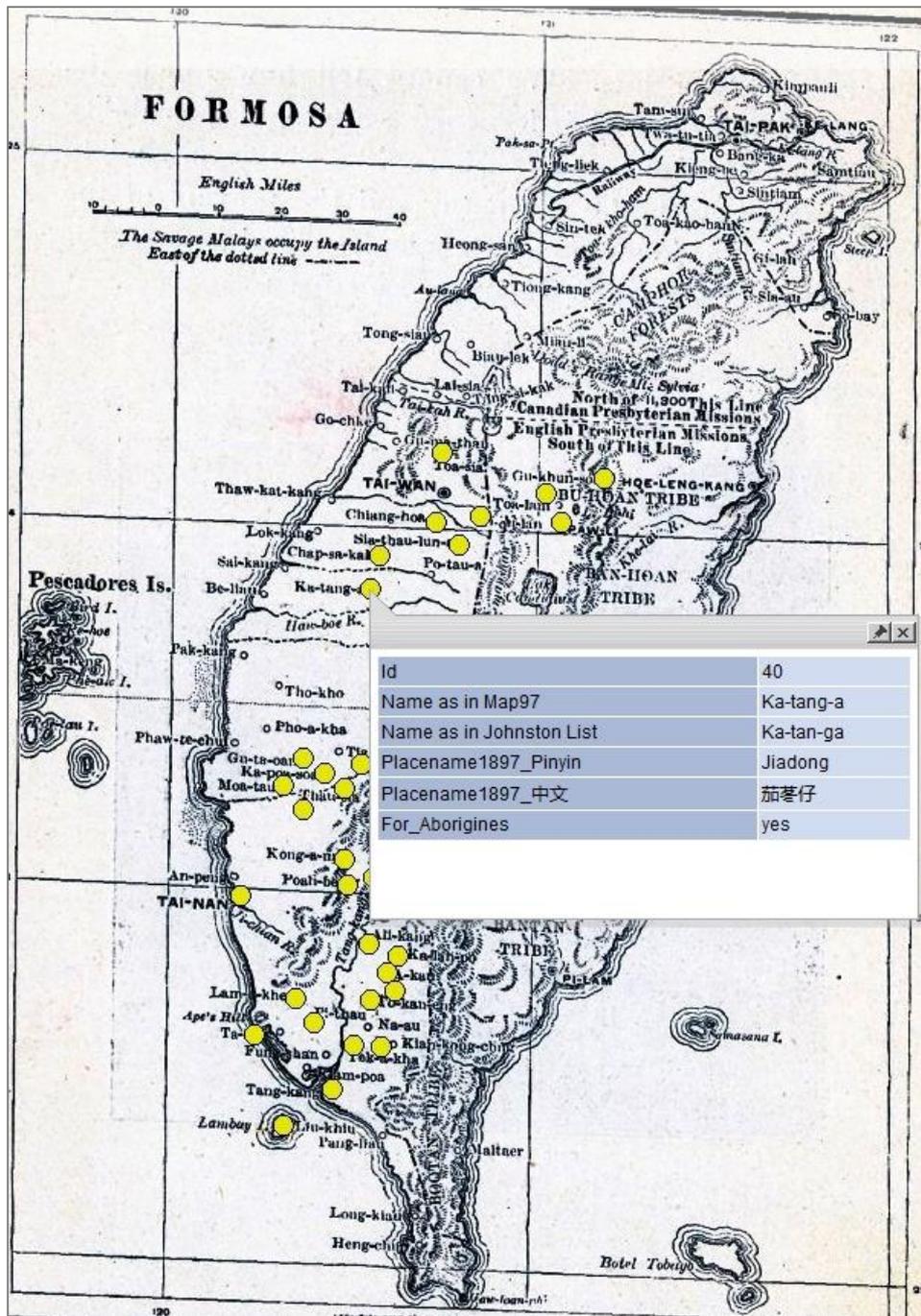
The interactive GIS-Version of Map 5 has been georeferenced in order to be placed on a modern electronic map of the world (like Google Earth). In addition, data on 59 (Canadian) Presbyterian mission stations existing in 1895 has been added to the purple dots and can be “visited” interactively by the user. Place name data of the original map has been connected with present-day geographic names, in Romanized versions (Taiwanese, POJ) as well as in Chinese (Pinyin and Mandarin). Next to place name data other important data has been attached to each location, like the GIS geocodes and the administrative environment. Altogether, the 1895 map provides the second backbone for the fused GIS version of the entire period 1875-1895.

Next to the Campbell map, the Mackay Map - in combination with the Mackay List – is the main source of the GIS version for the Northern Region of Taiwan, providing information on 59 mission stations.

Map 6: 1897 (The Johnston Map)

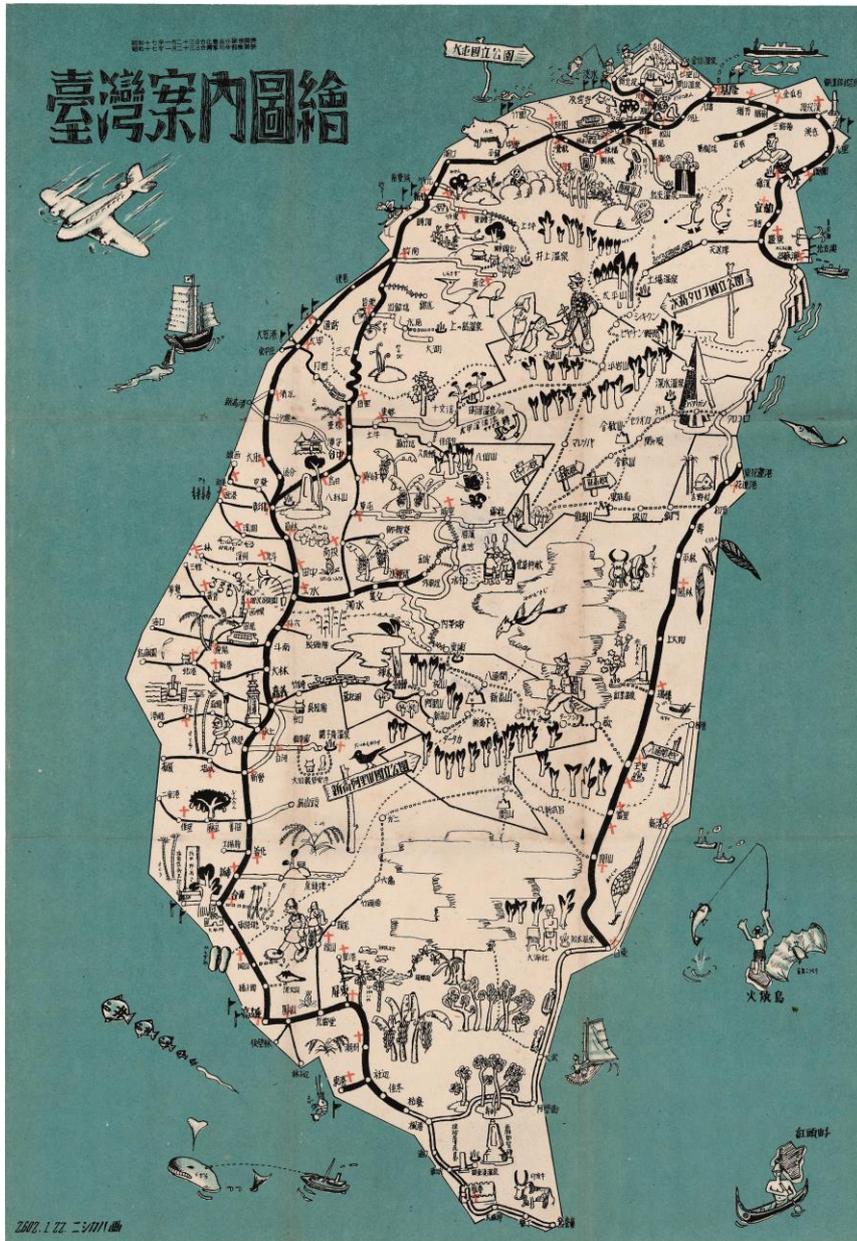
The map, entitled “Formosa”, is contained in a book published in 1897, in which James (=Jas) Johnston, a Presbyterian missionary to China, retells the story of the Presbyterian Mission to China, including Formosa (which until 1895 had been part of the Chinese Empire). The data contained in an Annex to the script refers to 1895. Thus this Map is a complement of some sorts to the Mackay Map of 1895 by the same publisher in New York. It is in some measure a semi-official account of the Presbyterian Church’s activities in China. Two Chapters of the book are devoted to Taiwan/Formosa, the map itself faces p. 161. It may be noted that this map is the first and only one which contains a drawn boundary line between the two Presbyterian Churches areas of activity. As in maps 1875 and 1880, a special mention has been made when a Station is devoted primarily to “aborigines”.

Map 6: 1897, the interactive GIS-Version



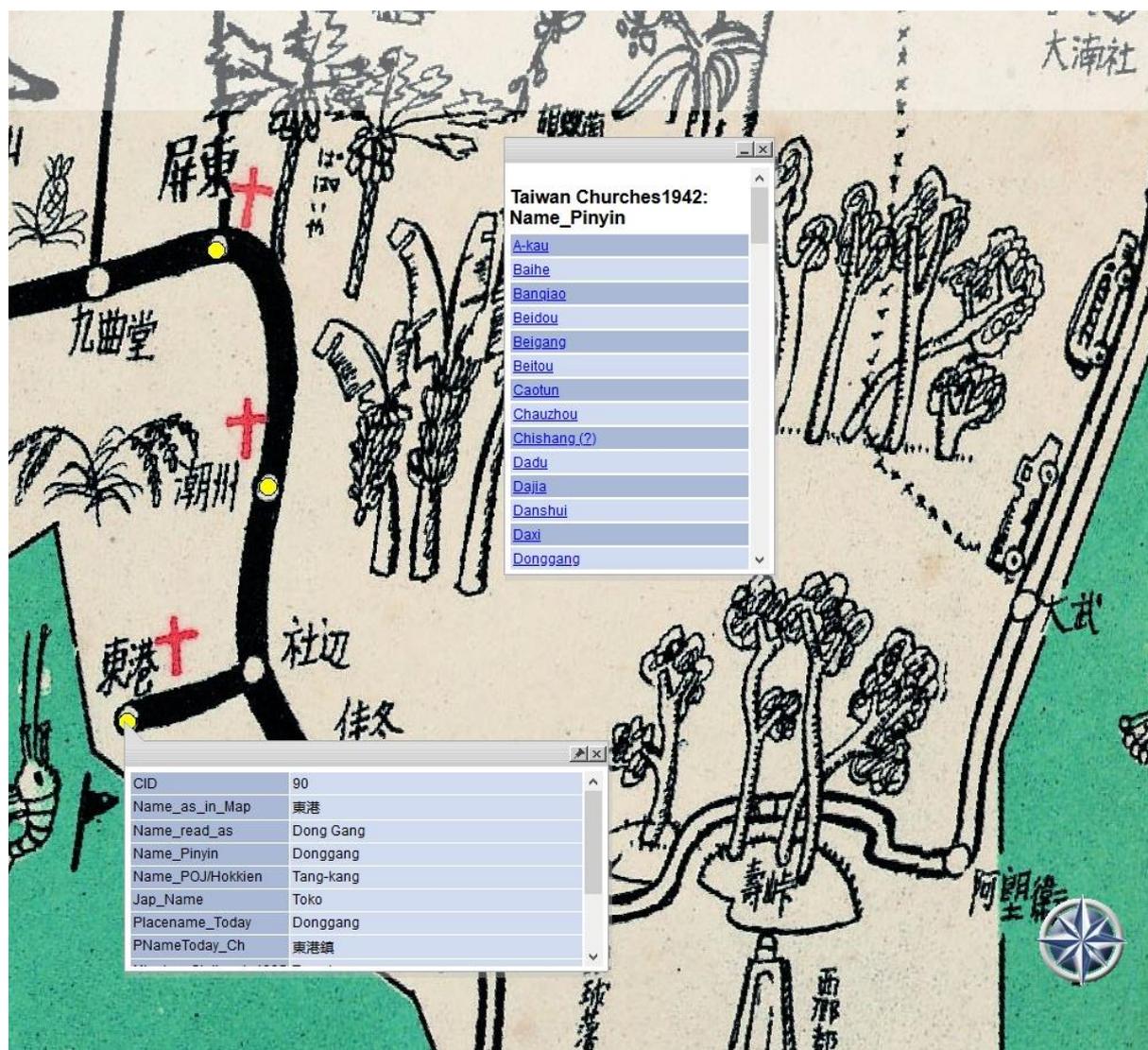
The interactive GIS-Version of Map 6 has been georeferenced in order to be placed on a modern electronic map of the world (like Google Earth). In addition, data on 64 (English) Presbyterian mission stations existing in 1895/96 has been added to the yellow dots and can be “visited” interactively by the user. Place name data of the original map has been connected with present-day geographic names, in Romanized versions (Taiwanese, POJ) as well as in Chinese (Pinyin and Mandarin). Some locations have been added to map in order to synchronize the content of the Map with the List provided by Johnston in his book and listed in the data as well (“Name as in Johnston List”).

Map 7: 1942 (Map of Churches)



This map provides some data on the location of Christian churches in Taiwan at the end of the Japanese period in 1942. It can be used to extend the 1865-1895 dataset into the period of Japanese rule of Formosa/Taiwan. This map has a curious history. It is part of an effort made by the Japanese authorities to compile and publish an “Illustrated Guide of Taiwan”. Its publisher was the Taiwan Branch of the Japanese East Asian Travel Agency. This explains the “playful” background, looking almost like a children’s map. As such the map is still today quite well known in Taiwan, even used as a motive for postcards. In the version used for this study an important additional piece of information has been added: location of churches are marked in the map with a red Christian cross. Most probably this information was stamped into the map by members/officials of the Presbyterian Church of Taiwan.

Map 7: The interactive GIS-Version (excerpt)

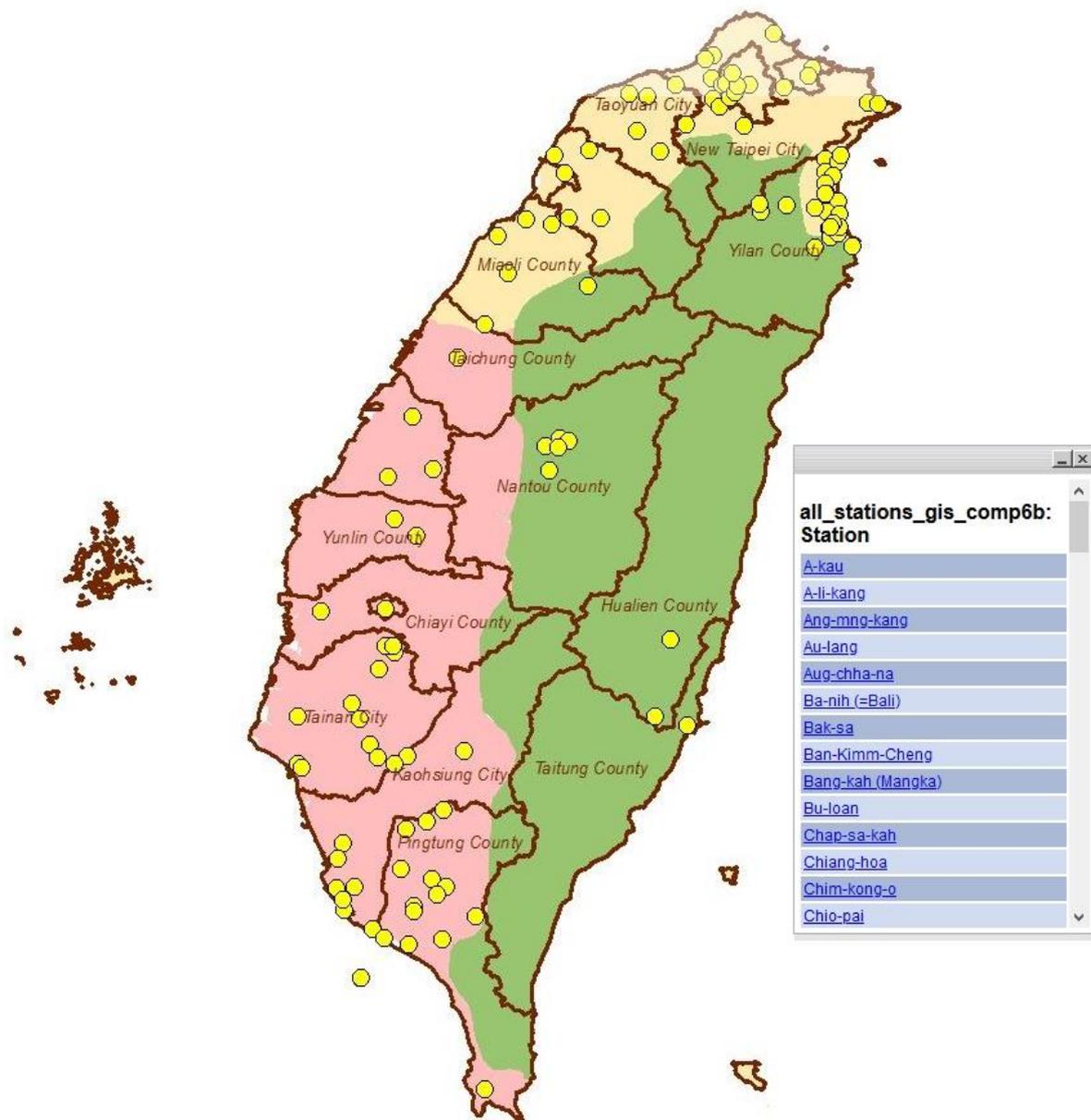


In the map place names are given in Chinese characters. These were read by a native speaker, and the Romanized version of the name(s) is the main information provided to the user of the interactive map. The yellow dots (= locations with churches) can be accessed by a list in which the Pinyin version of the place name is displayed. Clicking “Donggang” the history of the place name appears in the table, from the Chinese version (in the map), via its reading (“name read as”) and its assigning to different language versions, including Japanese (“Toko”), during the 1940s. Then the place name of today is given, in Mandarin as well Pinyin format. Finally a link to a mission station existing in 1895 (“in” or “near”) is shown, and a link to an existing Wikipedia page is provided:

Continuation of CID90-Table in Map above

Mission_Station_to1895	Tang-kang
Id	71
Wiki_Link	https://en.wikipedia.org/wiki/Donggang, Pingtung

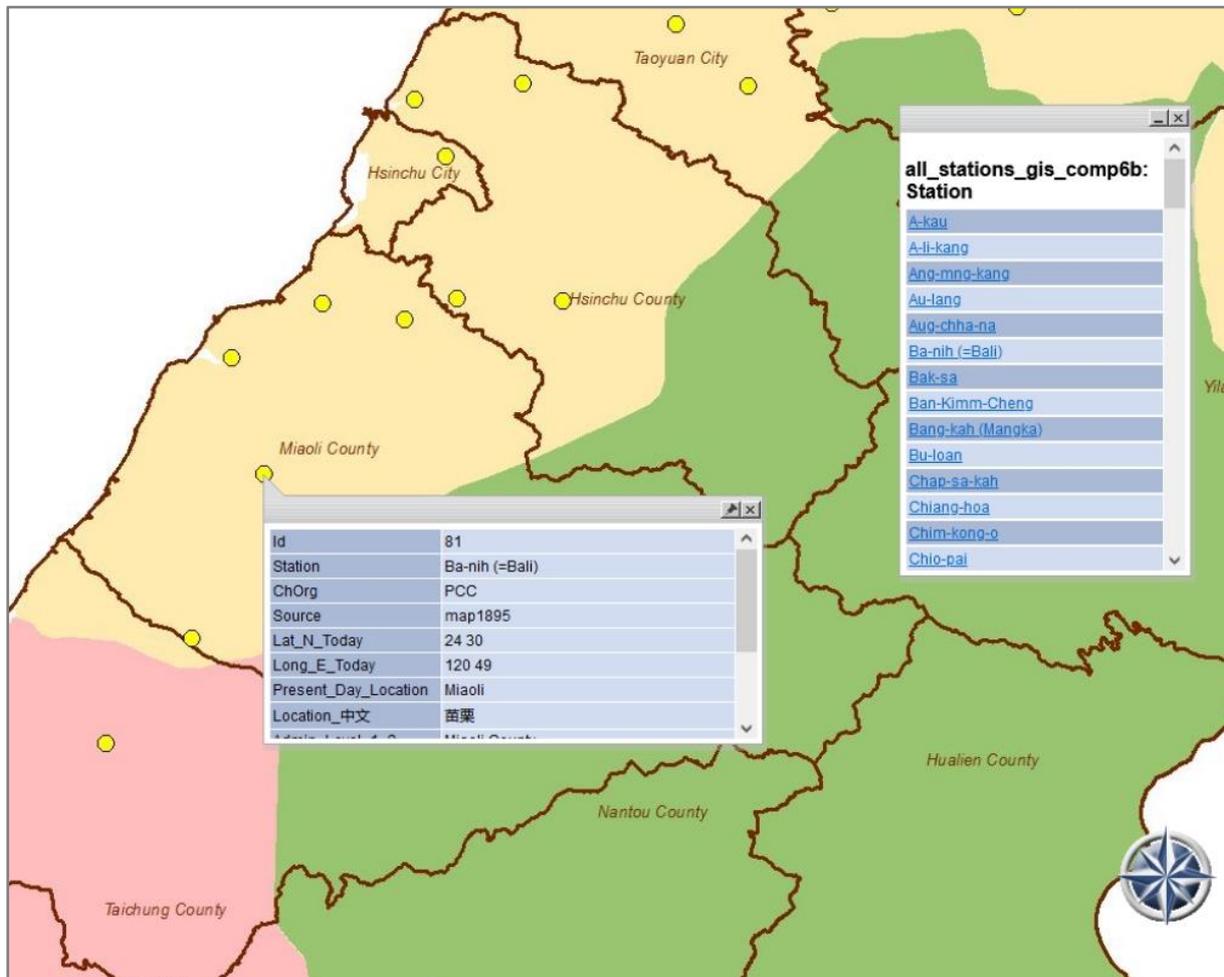
Here “Donggang” (CID 90) has been linked to historic Tang-kang (Id 71). This data provides the basis of the extension of the GIS-Version 1 from 1895 to 1942 (= GIS compilation 2).

GIS Compilation 1 (1865-1895)

The GIS-Compilation has two purposes: (1) assembling the data on all mission stations from all maps, and (2) presenting these on a modern (present-day) map of Taiwan. The map above shows all 113 stations that were found on the *historical* maps between 1865 and 1895/97 as yellow dots. Source is the point-data of maps 1-6. The underlying GIS-impression of Taiwan (coastal lines and islands) is taken from a *modern* GIS, with the brown lines depicting the county boundaries of present-day Taiwan.

The division of Taiwan in three major regions (green, pink, yellow) is again *historical*, and has been taken from Campbell's map of 1889. The fusion of historical and present-day data is one of the major advantages of an historical GIS.

GIS-Compilation 1: Query on Ba-nih (=Bali)



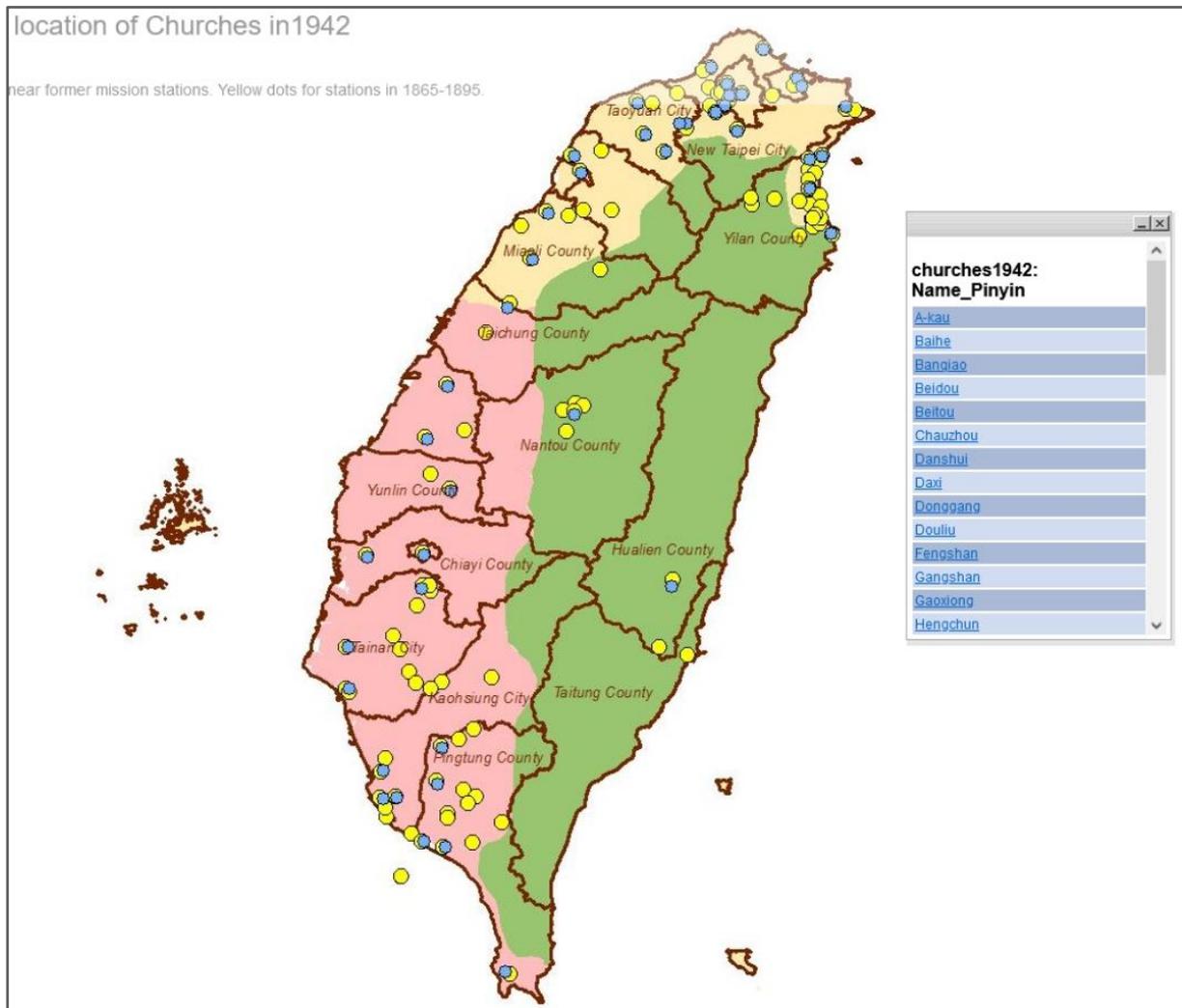
Continuation of the pop-up-table:

Location_中文	苗栗
Admin_Level_1_2	Miaoli County
TWN_Admin_Levels3_4	Miaoli City
Wiki-Link_EN	https://en.wikipedia.org/wiki/Miaoli
Wiki-Link_中文	https://zh.wikipedia.org/wiki/%E8%8B%97%...

The query on the point-data summarizes the data contained in the individual historic maps. It is revealed in the pop-up table in the excerpt GIS map and its continuation appearing below the map. It compiles the data collected for each of the 113 Mission Stations, and also offers a definitive (i.e. weighed) Lat/Long-Geocode for each station. Furthermore, for nearly all stations there are internet-links in English and Chinese to official sources on the history of the cities/towns in which the Mission Stations or their historic names are mentioned and explained.

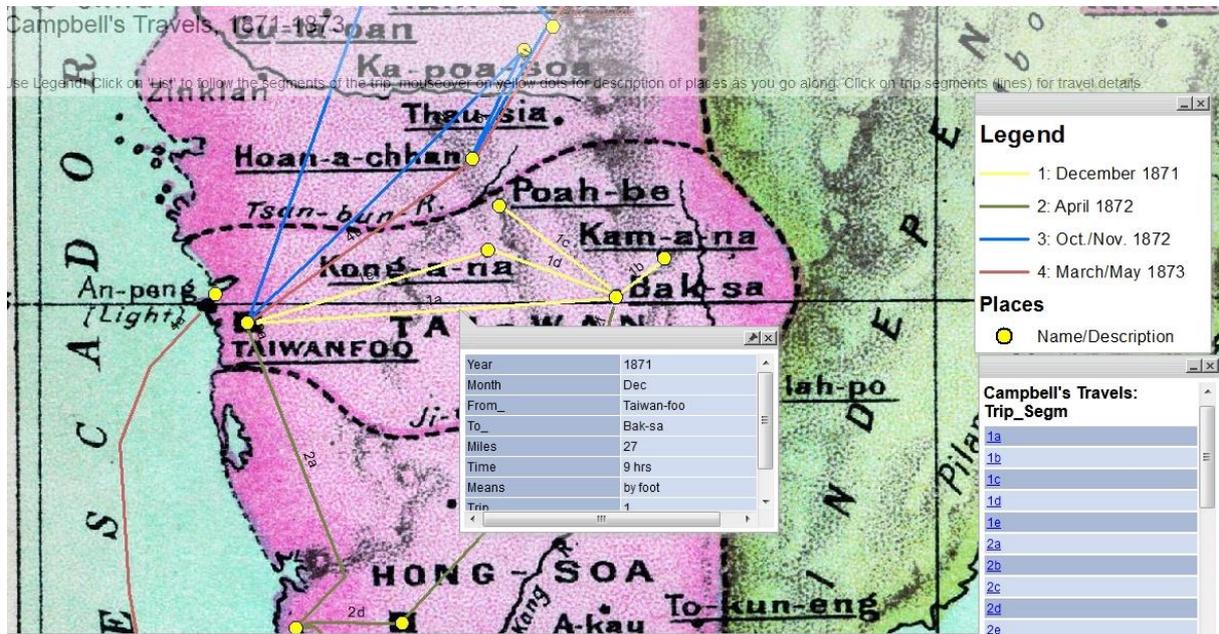
The example given here is Bah-nih (also written as Pali or Ba-li). Source is the 1895-map, in which it is recorded as BA-NIH. Its present-day location is in (or near) Miaoli City (administered by Miaoli County) in Taiwan.

GIS Compilation 2 (1865-1945)



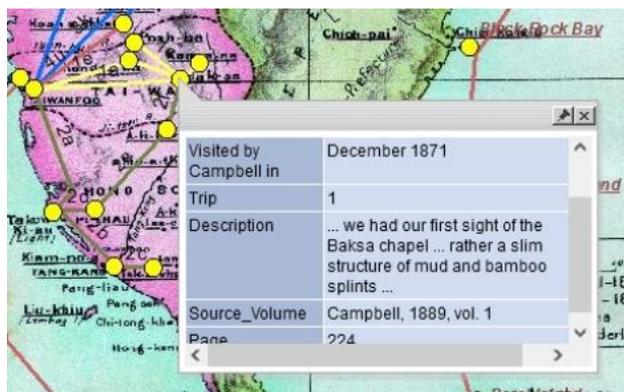
In GIS-Compilation 2 the data from the 1865-1895-compilation (yellow dots) has been interfaced with the data gleaned from the 1942-map (blue dots). The 91 blue dots represent Churches, not Mission Stations, because all mission stations had been closed by the Japanese Administration, while churches were still allowed to function. Thus only some, but not all, of the blue-dots can directly be linked to a Mission Station. But the positioning of the blue dots directly in or very close to one of the yellow dots may be indication of a historical link between the two data layers. As the user can interactively access the yellow and the blue dots by mouse click separately, connections between the two layers of information become apparent.

Campbell's Travels, 1871-73: Queries on segment lines and places visited



The trips taken are color-coded by segments. The yellow segments shown above pertain to Campbell's first trip in Taiwan, during which he visited the so-called "hill stations". His trip from Taiwan-foo to Bak-sa (segment 1a) is a 27 mile stretch and took him 9 hours by foot. Missionaries travelled by foot or boat/ship. Riding animals or being carried in a sedan chair by fellow men ("coolies") was frowned upon.

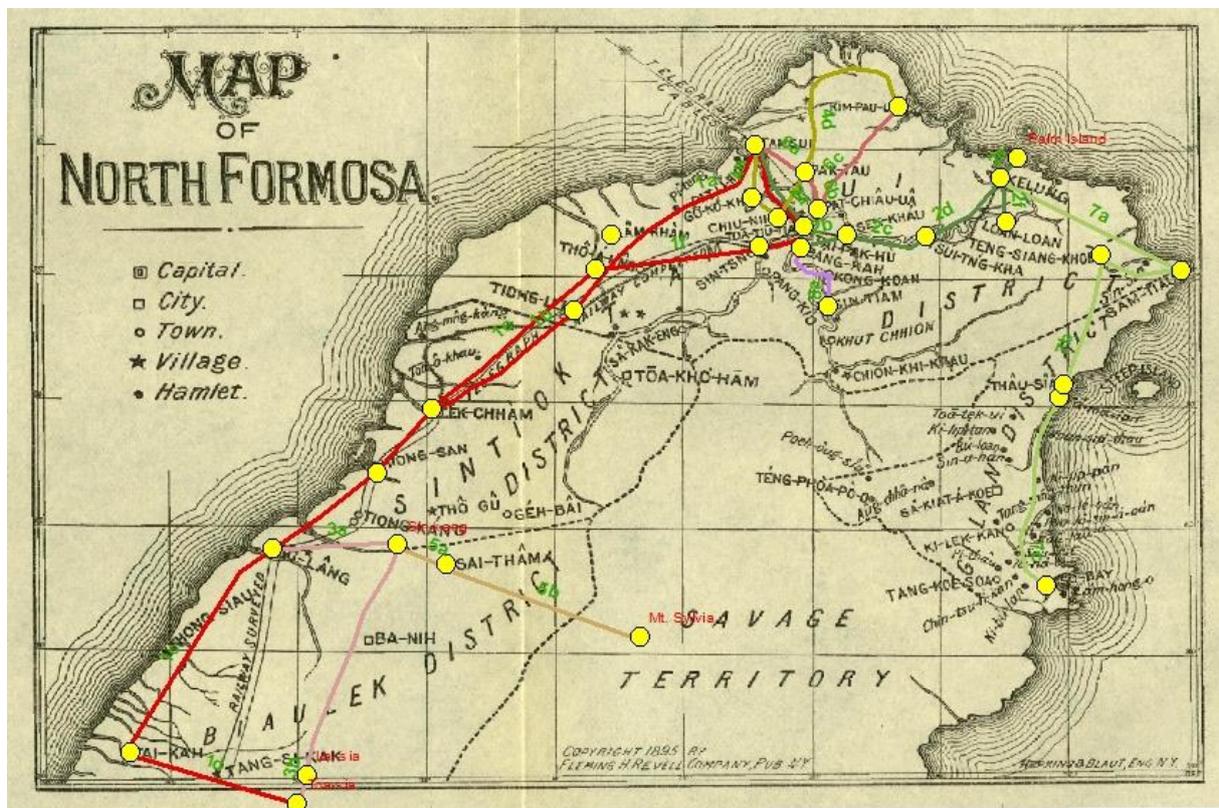
Description of places visited



Further information is provided by clicking on a yellow dot appearing at the beginning/end or in the course of a travel segment. Information presented there has been taken from Campbell's book, in which he reprinted his travel notes. The example given pertains to Baksa and its chapel he encountered there on his very first trip.

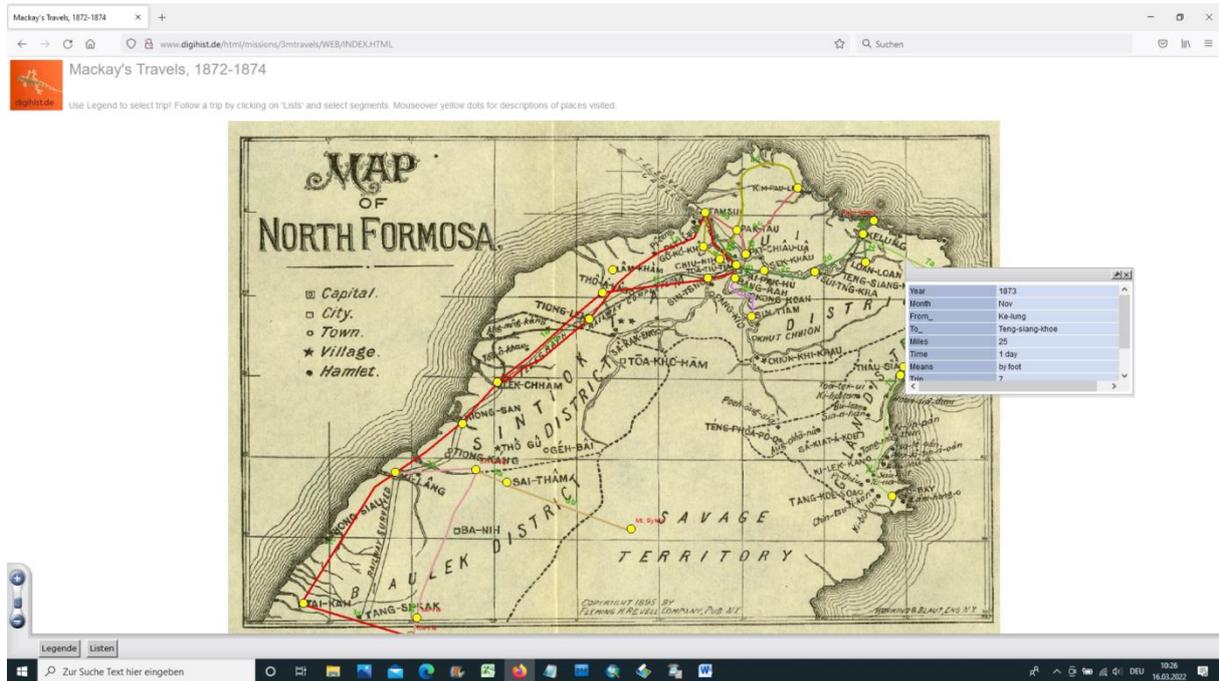
By clicking through the segments and the pertinent places the user of the GIS-map can reconstruct the travels of the missionaries as they mapped and described them in their printed works.

Mackay's Travels, 1872-74

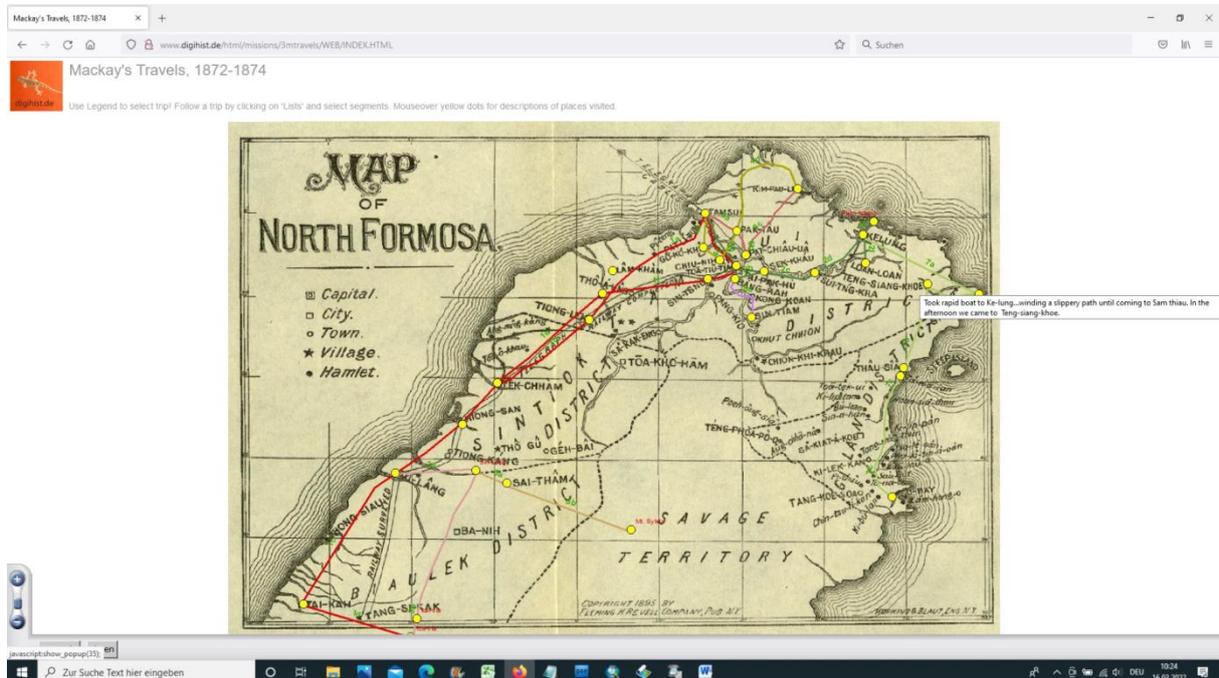


George Leslie Mackay was a constant traveller, mostly of shorter trips in northern Formosa. These travels can be reconstructed using his publications and his diaries, which have recently been published in Taiwan. The GIS-map records 8 trips undertaken in the years 1872-1874. They can be accessed by selecting segments of lines and/or yellow dots, which display texts from his diary. Two samples are presented on the opposite page.

Mackay was an astute observer, and the descriptions provided by the examples from his diary reveal much about the life in Formosa at the time, despite the “colonial views” (re)presented by Mackay especially during his earlier years in Taiwan.

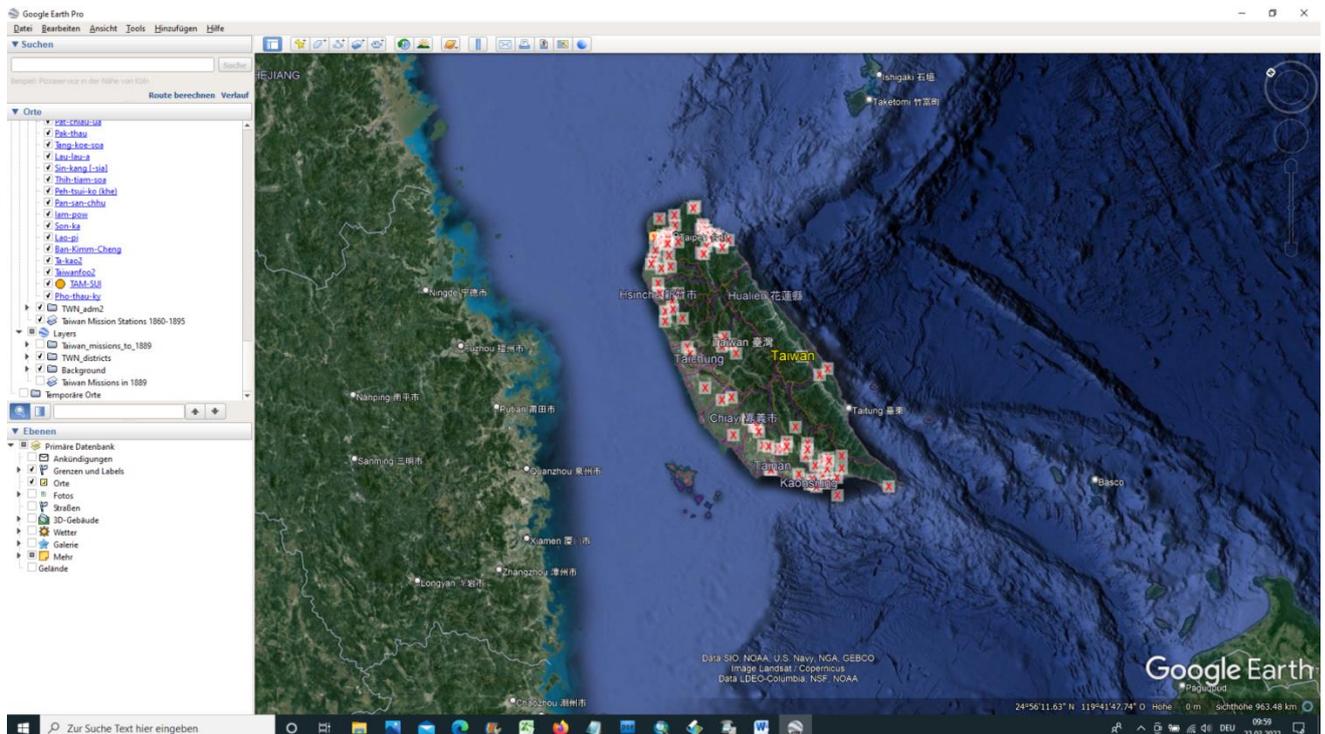
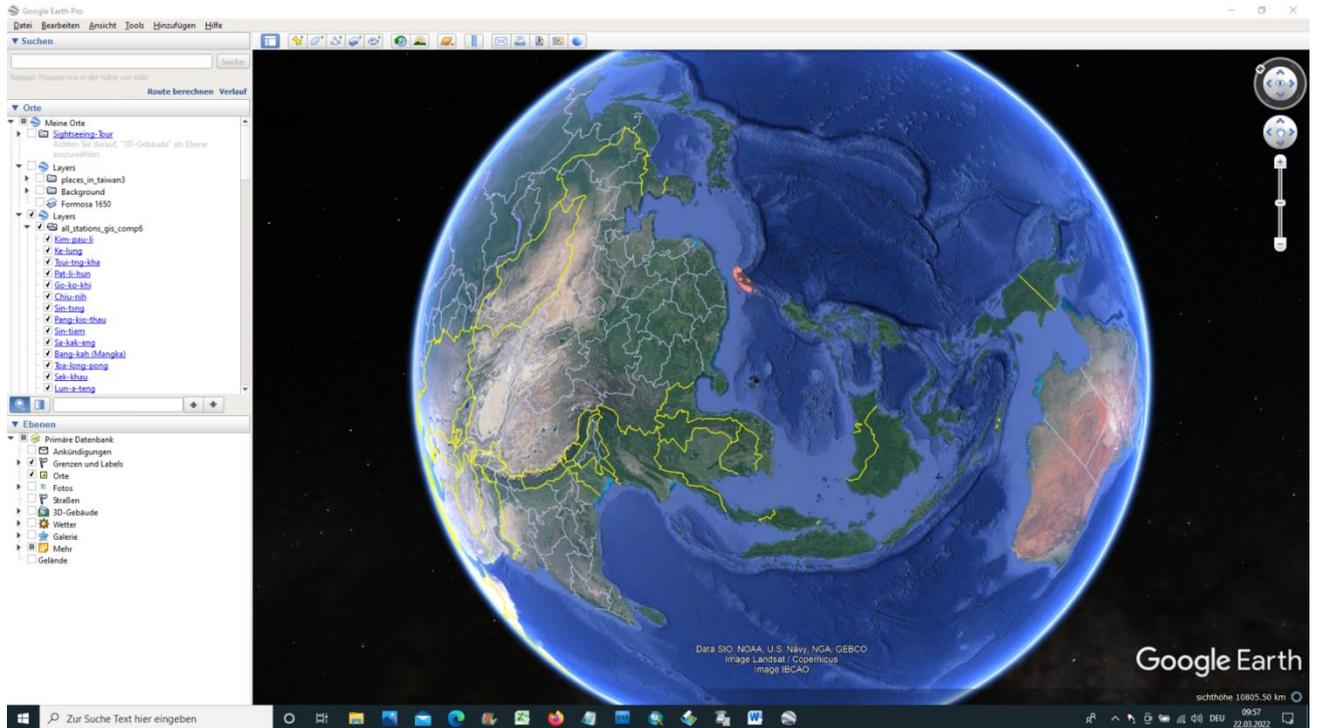


The map provides data on a trip from Kelung to Teng-siang-thoe in November 1873.



Again, deep mapping is employed, using Mackay’s diaries as a source. A click on the map reveals an example of Mackay annotating his travels between Ke-lung and Teng-Siang-Koe: “Took rapid boat to Ke-lung ... winding a slippery path until coming to Sam-thiau. In the afternoon we came to Teng-siang-khoe.”

Interfacing with Google Earth



The data of GIS Compilation 1 has been converted into a KMZ-File and loaded onto Google Earth Pro. The blue script in the listings on the left are the mission locations, and they can be “flown to” by double clicking on the place name. In the map the missions appear as a white rectangles with a red cross on the contours of present-day Taiwan.

Finding the Sintiam /Xindian Church

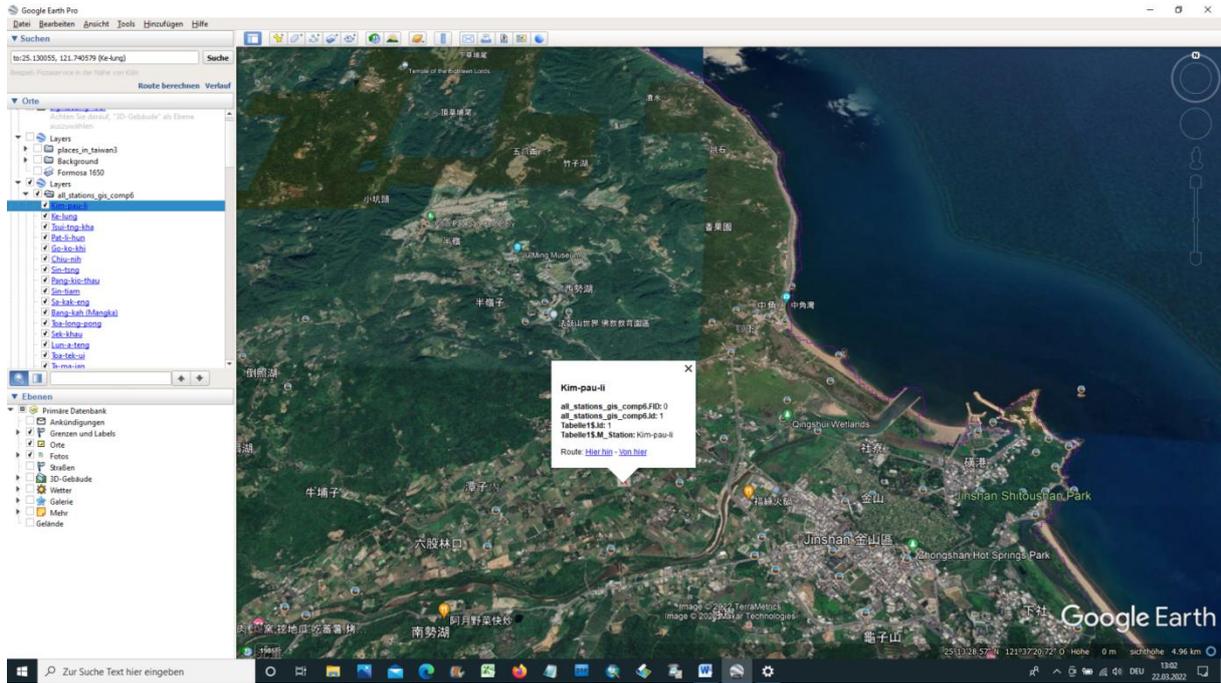


A click on “Sintiam” in the list flies the user to Xindian, today located in Tapei City District.

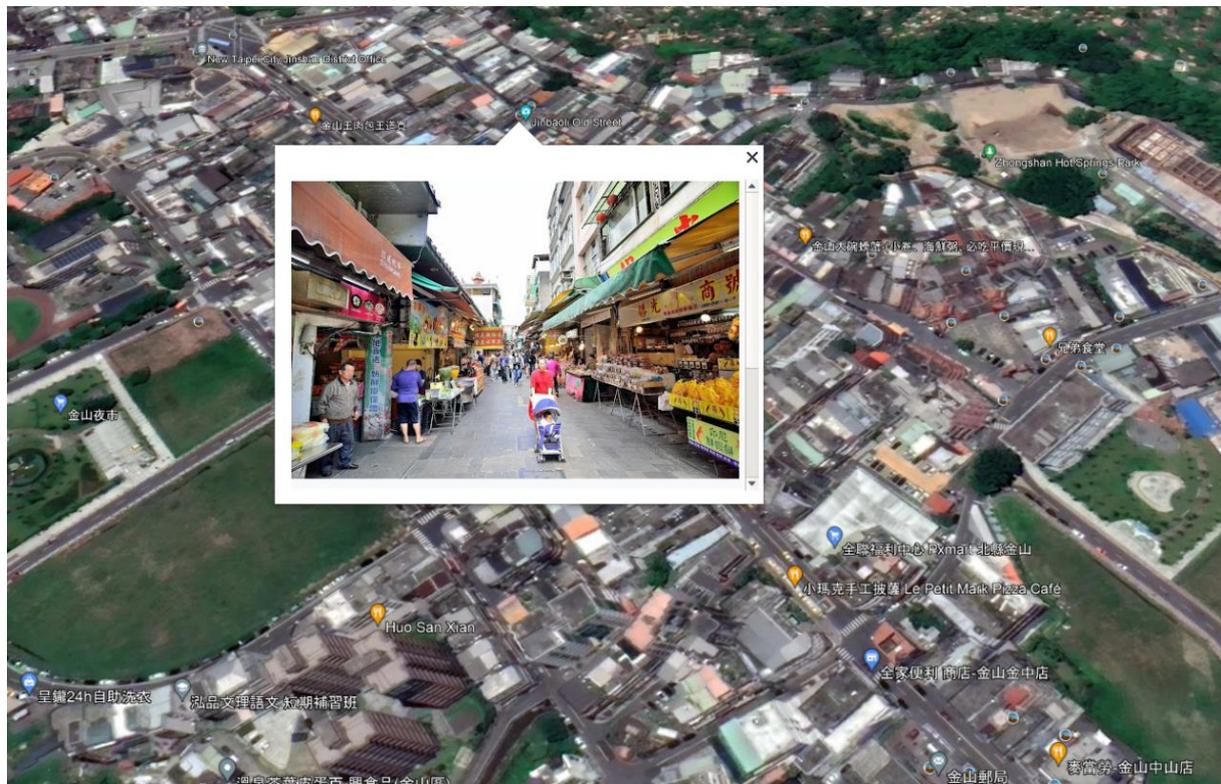


The Presbyterian Church is contained in the Google Earth data and presents a picture of the Church as it appears today. Sintiam was the first stone church built Taiwan. It was located near the river, and only later on moved away from the river further into the hills.

Finding Kim-pau-li Mission and Church



Clicking “Kim-pau-li” our dataset flies us near Jinshan, a town at the North East coast of Taiwan

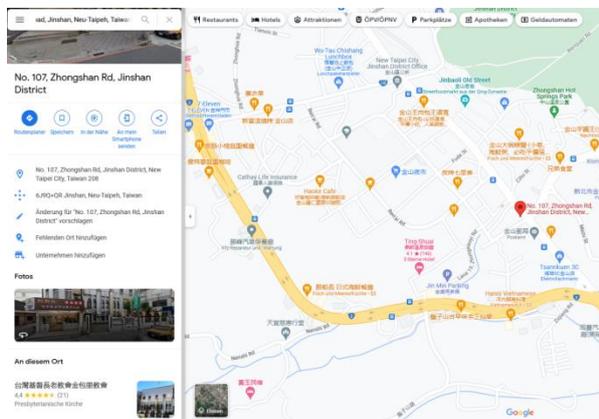


The center of Jinshan is called “Jinbaoli” Old Street, so we know we are in Kim-pau-li.

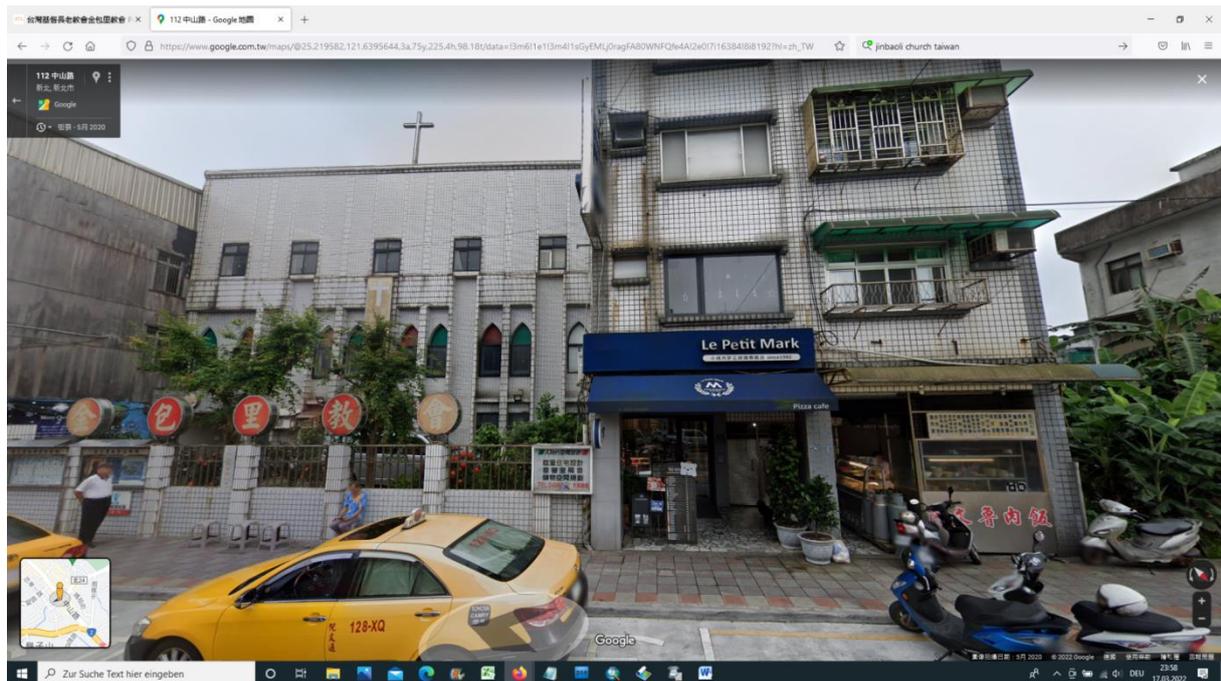
Switching to Google Maps and searching for “jinbaoli churches” we find a Presbyterian Church as top listing with an address given.



Searching this street address we get further information and a 360°-image-link to the church:



The 360° street-view-image depicts the church (the building on the left) in its urban setting



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時間: 2018-05-25 FRI 10:00PM-12:00AM 地點: 本所821室

主辦單位: 文化史研究群

The Taiwan Missions Project: From Historical Geodata to Deep Mapping
臺灣佈道會計劃: 從歷史地理數據到深度的對映 / Dr. Andreas Kunz (德國 The Taiwan Missions Project計畫主持人)

【文化史研究群】

演講者: Dr. Andreas Kunz (德國 The Taiwan Missions Project計畫主持人)

題目: The Taiwan Missions Project: From Historical Geodata to Deep Mapping臺灣佈道會計劃: 從歷史地理數據到深度的對映

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See: <https://ecaidata.org/dataset/formosa>
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