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Japanese Colonial Cartography in Taiwan, Korea and Kwantung Province, 1895-1924

Abstract

Japanese colonial governments in Taiwan, Korea and Kwantung Province carried out land survey including the establishment of landownership and the preparation of land registers with cadastral maps in order to raise revenue from land tax. From the cartographic point of view, it is remarkable that these colonial governments produced topographical maps in the same manner by scaling down the cadastral maps prepared in advance. The purpose of this presentation is to trace the development process of this efficient map making, surveying the discernment of the planners.

During the Land Tax Reform (1873-1881), most of the cadastral maps were not prepared with modern surveying technique in mainland Japan. Although the Ministry of Finance tried to remake the cadastral maps since 1889 for the grasp of accurate size of the taxable lands, complete survey with plane table was carried out only in limited prefectures. Learning from this experience, Tanetaro Megata (1853-1926), the high officer of the Ministry of Finance, promoted the application of modern surveying technique including triangulation in the land survey of Okinawa Prefecture and lead the officers of colonial governments to extend this manner to the newly acquired territories.

Japanese Colonial Cartography in Taiwan, Korea and Kwantung Province

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Japanese Colonial Cartography

Modern cartography in society
Military operations and civilian use
Governance of overseas colonies (Edney, 1997)
Modern cartography in Japanese colonies
Preparation of cadastral maps in combination with
topographical maps
Japanese colonial cartography in East Asia
Transfer of ideas and technology

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Cadastral Maps and Topographical Maps

Land survey

Establishment of modern landownership
Land registration: cadastres and cadastral maps
→Imposition of land tax
preparation by Financial authorities

Topographical maps

Military operations and civilian use
Preparation by military institutions

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Cadastral Maps, Topographical Maps and Triangulation

The application of triangulation to
measure the locations of survey
stations

1. Land survey for cadastral maps
2. Reducing the scale of cadastral maps
3. Survey of landform and leveling
→Completion of topographical maps

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Examples of this kind operation

(Kain and Baigent 1992)

Corsica annexed to France

Cadastral maps (1/10,800)

Topographical Maps (1/86,400)

Netherland under French occupation
(1811-1813)

Belgium : Application of French regulation
(1846-1854)

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Cadastral Survey in Mainland Japan

1. Jinshin Chiken Jibiki Ezu 壬申地券地引絵図 :
1872-

Before the Land Tax Reform. Traditional survey

2. Kaiso Jibiki Ezu 改租地引絵図 : 1873-1881

The Land Tax Reform, Traditional survey

3. Kosei Zu 更正図 : 1885-1889

Resurvey of the lands, Application of plane table was
prescribed, but only partially executed

→Inaccurate measurement of size of taxable lands

→Imposition of land tax was not equitable

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Tanetaro Megata (1853-1926)

High officer in the Ministry of Finance
 He conducted the Jioshi Chousa 地押調査 to prepare Kosei Zu 更正図 and realized the necessity of the introduction of modern cartography, especially triangulation.



Tanetaro Megata

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Land survey in Okinawa Prefecture

Preparation under the leadership of Tanetaro Megata
 Provisional Bureau of Land Surveys of Okinawa Prefecture 臨時沖繩県土地整理事務局 1898-1903
 Land survey by specialized engineers
 Introduction of Triangulation
 Assistant surveyor's school
 A model of land survey in overseas colonies :
 Taiwan; Korea and Kwantung Province
 Topographical maps were not prepared

Colonial Cartography in Taiwan

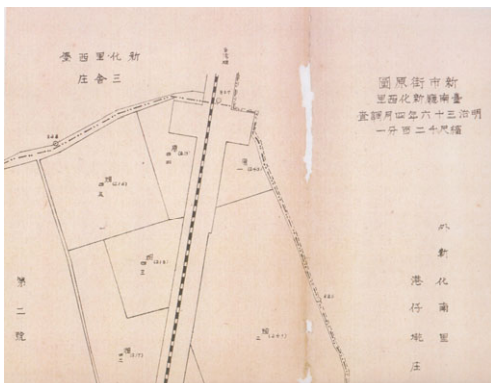
Succession of Liu Ming-ch'uan's 劉銘傳 land tax reform 清賦事業: 1886-1888
 Bureau of Land Surveys 臨時台灣土地調查局: 1898-1905
 Introduction of triangulation after the inspection of the land survey in Okinawa prefecture: May, 1899
 Cooperation of the Imperial Japanese Land Survey
 Production of topographical maps was decided later.
 Topographical maps 台灣堡圖 (1: 20,000, 1,466 sheets)

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Triangulation points and leveling points

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An Example of Cadastral map

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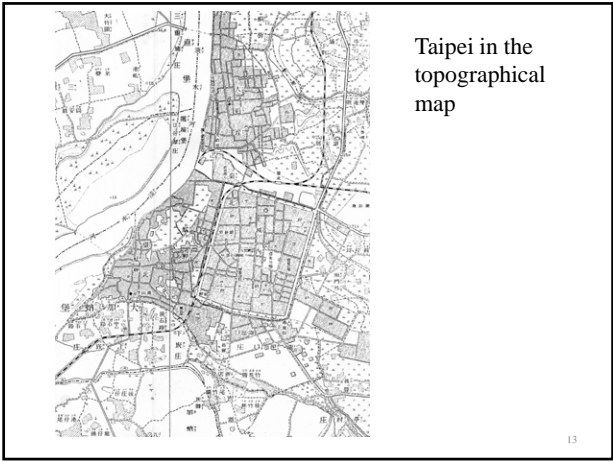
臺灣堡圖

一九〇四（明治三十七）年調製

原圖調製：臺灣總督府臨時臺灣土地調查局
 原圖出版：臺灣日日新報社

Reprint of topographical maps (Taipei, 1996)

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Taipei in the topographical map

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Colonial Cartography in Korea

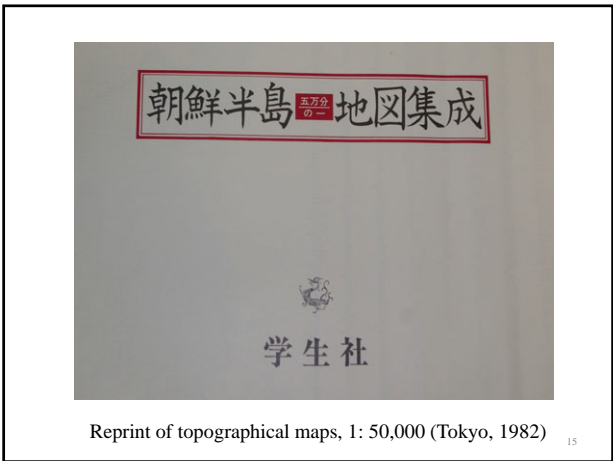
Succession of Korean land survey 光武量田 (1899-1904)
Tanetaro Megata (Financial Adviser of Korean Government) prepared the land survey, 1904-1907

Bureau of Land Surveys 朝鮮總督府臨時土地調査局
1910-1918

Staffs of Bureau of Land Surveys in Okinawa and Taiwan were appointed as officers: Magoichi Tawara (1869-1944) and so on

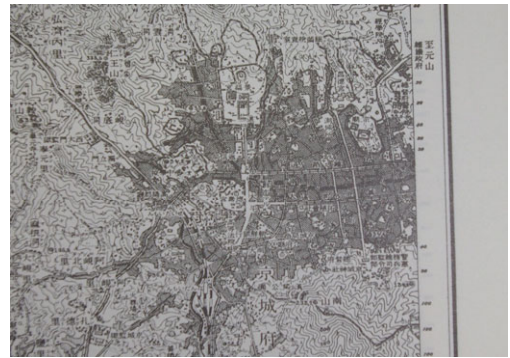
Extension of triangulation network from mainland Japan
Topographical maps: 1: 50,000, 1: 25,000, 1: 10,000, 925 sheets

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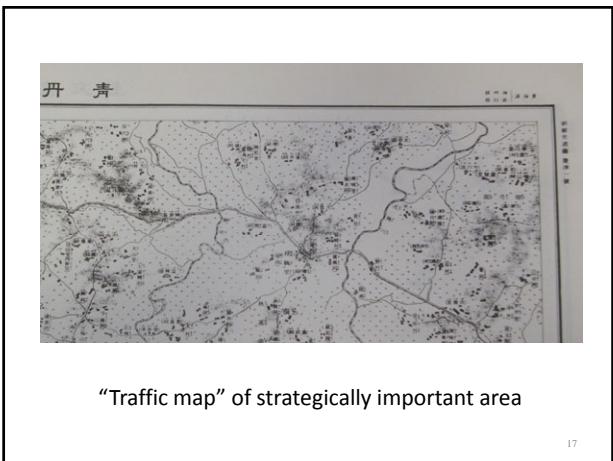


Reprint of topographical maps, 1: 50,000 (Tokyo, 1982)

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京城 Seoul



"Traffic map" of strategically important area

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Colonial Cartography in Kwantung Province

Department of Land Surveys 關東庁臨時土地調査部: 1914-1924

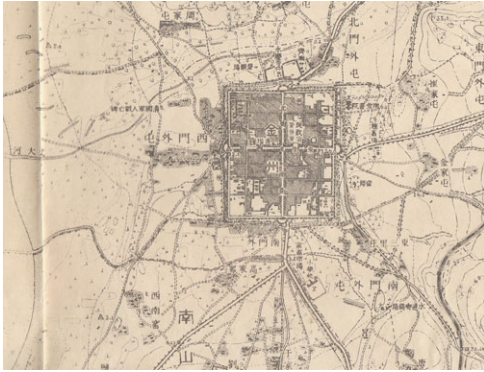
Application of triangulation

Topographical maps: 1: 25,000, 81 sheets,
1:10,000, 5 sheets

Difficult confirmation of landownership because

of the complicated customary land holding

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Jinxian of Kwantung Province, 1921

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Summary of Japanese Colonial Land Survey

Region	Period	The beginning of triangulation	The beginning of land form survey	Scale of cadastral maps	Scale of topographical maps
Okinawa	1898-1903	1899	—	1:1,200	—
Taiwan	1898-1905	1900	1902	1:1,200	1:20,000
Korea	1910-1918	1910	1913	1:1,200	1:50,000
Kwantung Province	1914-1924	1914	1915 (leveling)	1:1,200	1:25,000

Some Remarks on Japanese Colonial Cartography

1. Integrated map making: cadastral maps and topographical maps
2. Accumulation of experience: plan and field survey
3. Transfer of innovation : Schools for surveyors and instructive example for land survey in the Republic of China
4. First maps by modern cartography in each area

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Modern Land Survey in the Republic of China

Office for Land Survey 經界局

1. Research on the land survey of mainland Japan, its colonies, Vietnam, France, Germany, Hong Kong and United States 各国經界紀要1915、台湾土地制度考查報告書1915
2. Council of Land Survey: several surveying engineers who studied at the surveyor's school of the Imperial Japanese Land Survey
3. A plan to integrate map making: cadastral maps and topographical maps

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Japanese Colonial Cartography: An Overview

Land survey in mainland Japan:

- Cadastral maps prepared with traditional technology
- Topographical maps prepared by military organization

Land survey in Okinawa and overseas colonies:

- Surveying by specialist: engineers and their assistants
- Introduction of triangulation
- Integration of map preparing

Initiative of bureaucrats in colonial setting

- Integrated map making with advanced technology

Increased governmental income from land tax through the accurate measurement of the lands

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