Taiwan Baotu Re-imagined in OpenStreetMap

(Work in Progress)

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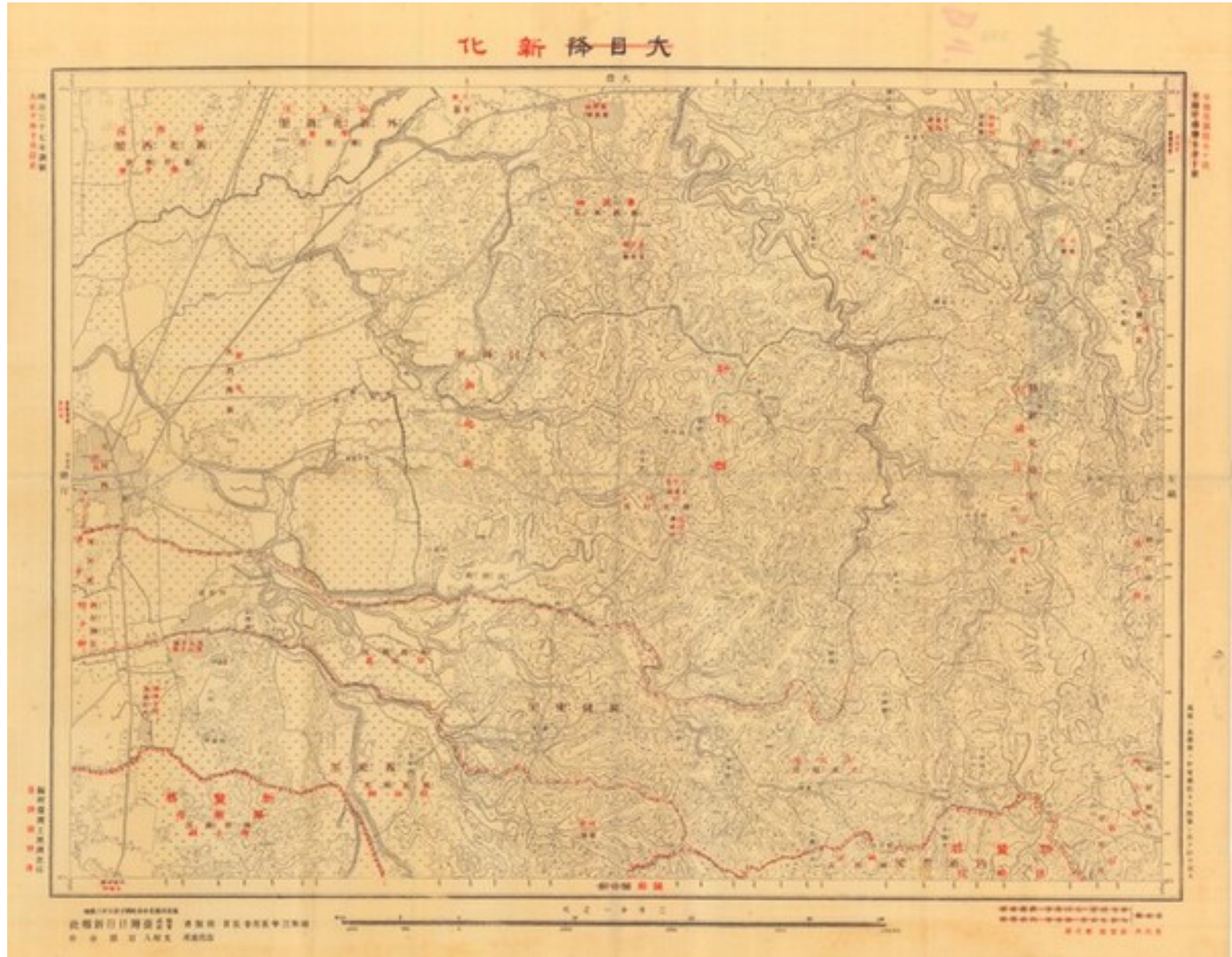莊庭瑞、許致銓、許煌鑫

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Taiwan Baotu & OpenStreetMap

- Taiwan Baotu （台灣堡圖）, 1906 & 1921
  - a set of 457 topographic maps of Taiwan, produced from systematic land surveys when the island was ruled by Japan
  - including information about place names, land use, transportation networks, landmarks, and others
- OpenStreetMap (OSM), 2004 –
  - Open Source and Open Data: Free software (GNU GPLv2) with collaborative mapping data (ODC ODbL)
  - a mendable toolkit for mapping and other online services
- Taiwan Baotu in OSM
  - accurate, computational, and transformative use of old maps
  - work in progress: reported in Digital Humanities 2015 and 2019

Sinhua 新化 大目降
(Tovacon in the Siraya language)
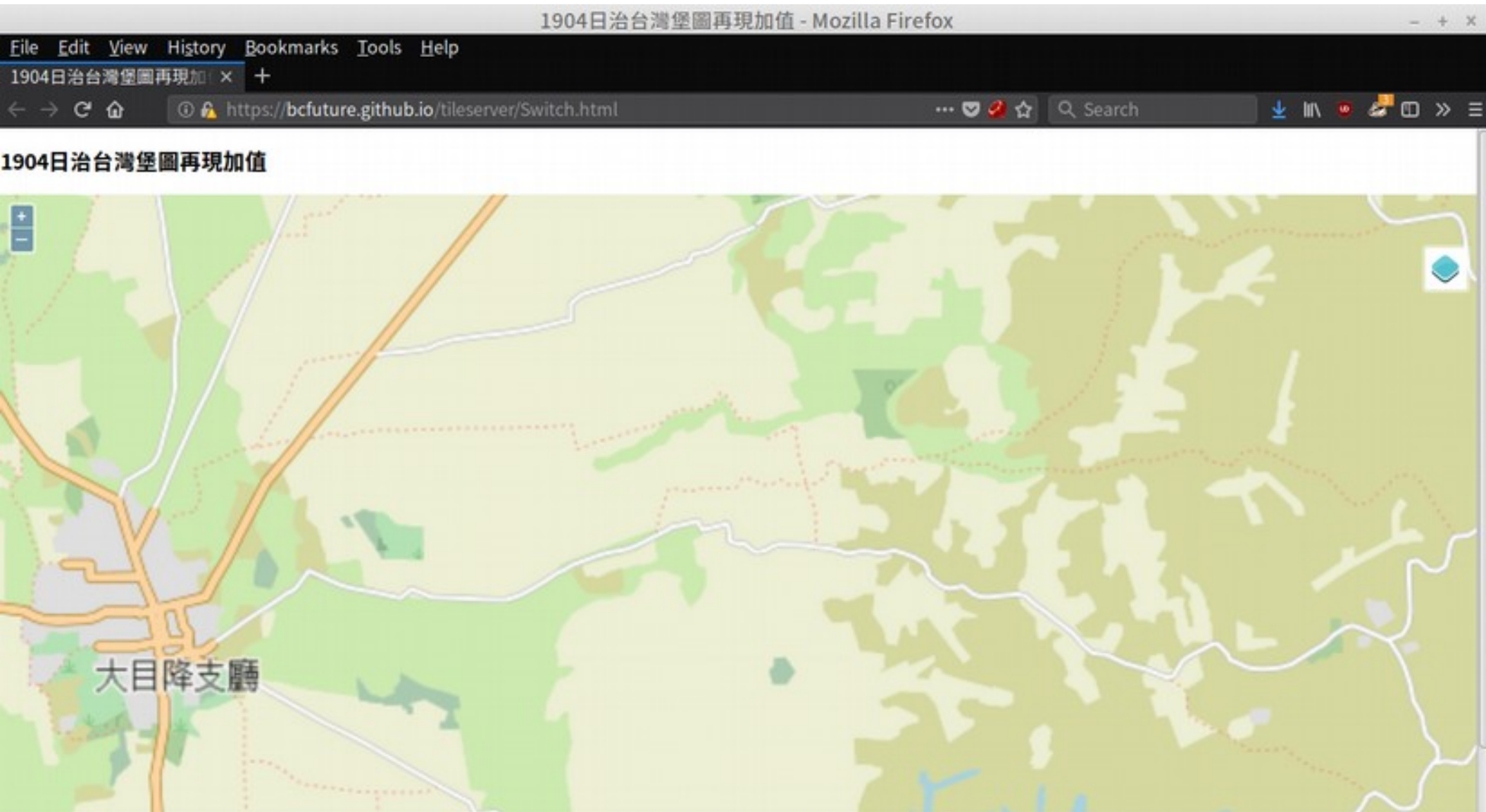
Current Day Sinhua in OSM
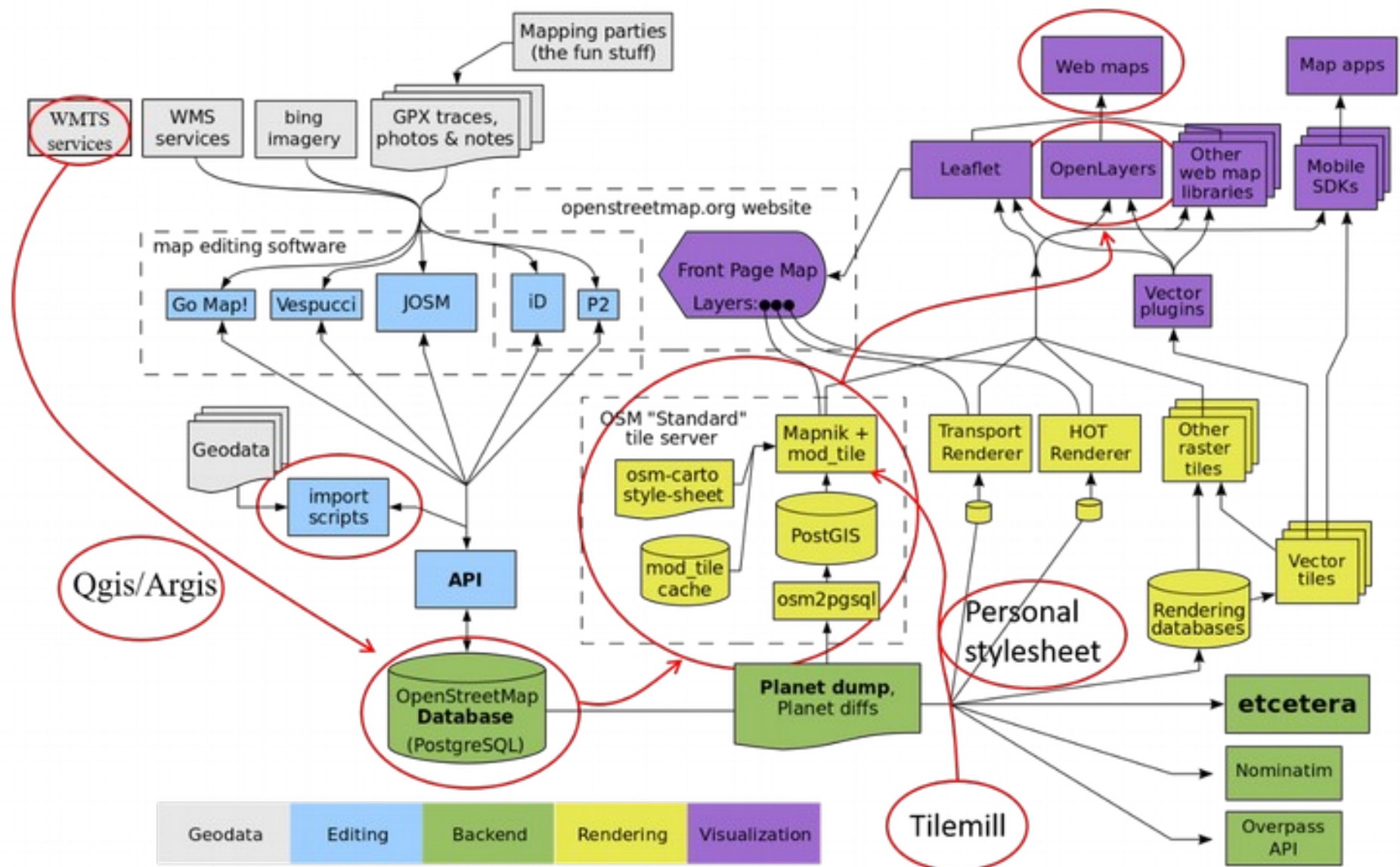
Sinhua in 1906, rendered in OSM

Old Maps Re-Imagined: How

- Digitize map sheets and merge images

- Extract and collect features from images

- Convert feature collections into OSM datasets

- Render datasets by self-hosted OSM tile servers

- Experiment with various map styles

- Pan-and-zoom multiscale modern map of the past
  - Available online in a preliminary form
  - https://bcfuture.github.io/tileserver/Switch.html

OSM Components (modifications)
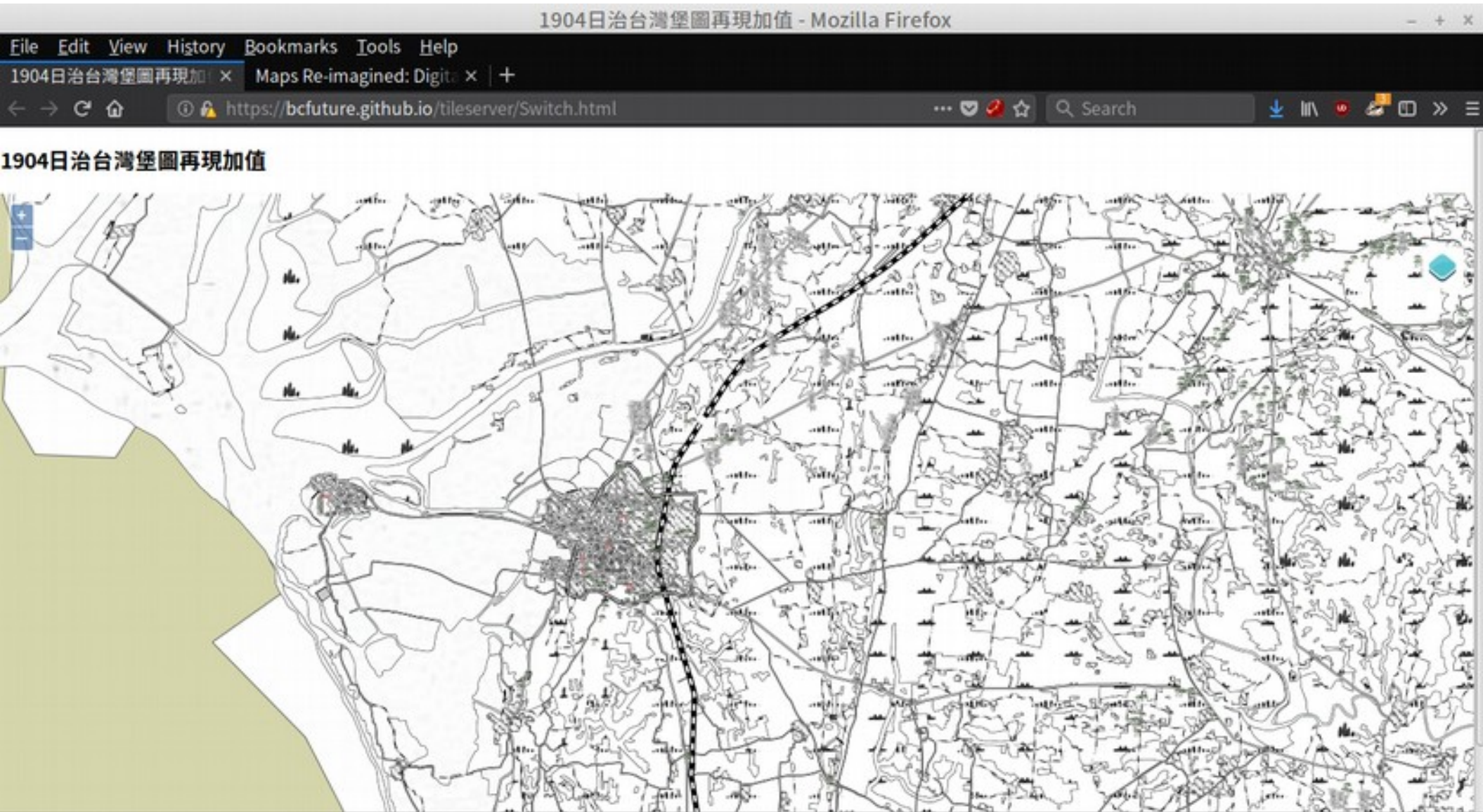https://wiki.openstreetmap.org/wiki/Component_overview

Old Maps Re-Imagined: Why

- The past is re-presented by accurate datasets rooted in historical maps but is now re-styled for novel use
- The past is perceived and explored anew
- The past and the present is compared (in OSM)

- Why in OpenStreetMap?
  - Reusable common infrastructure and data format
  - Abundant tools for processing, styling, and layering maps
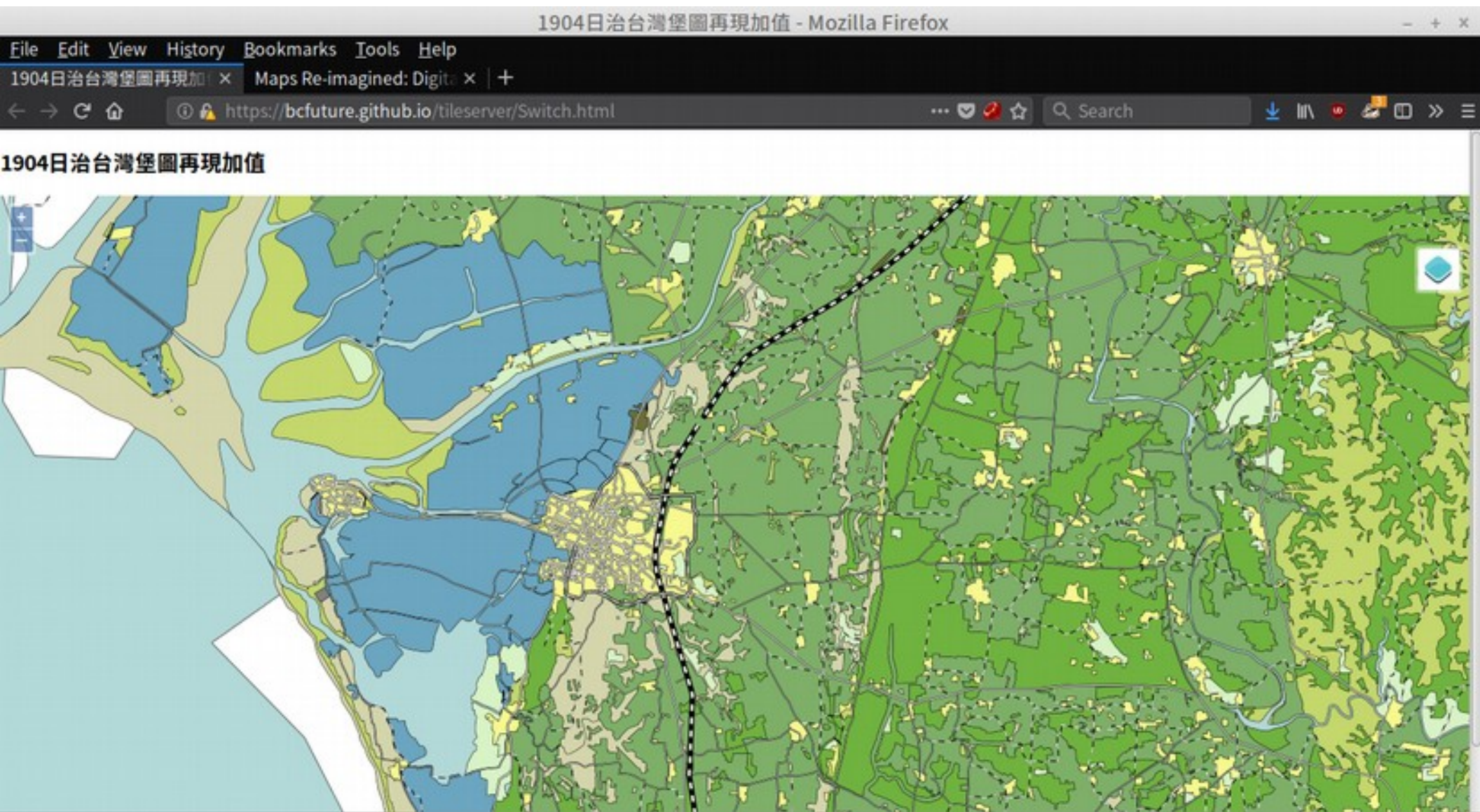 - Customizable map styling
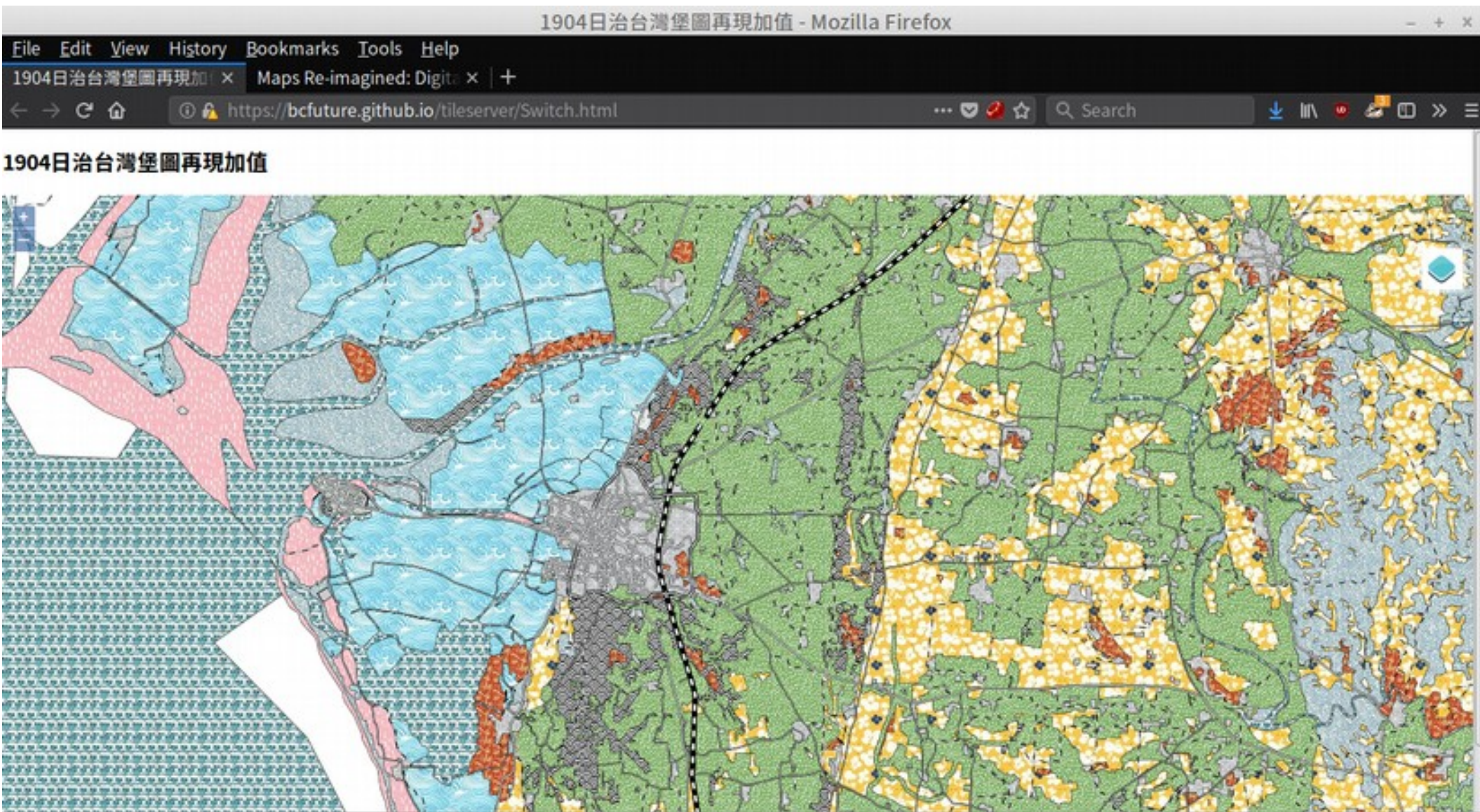
Tainan & Anping (Ink Style)

Tainan & Anping (Green Style)

Tainan & Anping (Ukiyo Style)

From Taiwan Baotu to OpenStreetMap

- Technical details: Use only open source tools
  - OpenStreetMap & Ubuntu
  - QGIS & WMTS (for feature extraction)
  - ogr2osm.py (for format conversion)
  - TileMill (for designing and editing map styles)
  - OpenLayers (for layering with other map sources)
- Proof-of-concept
  - manual work, putting pieces together, doing experiments
- Problem of scaling-up

- Re-visualizing datasets and linking with other resources

Thank You!