EVERYONE MAKES MISTAKES” – (CARTOGRAPHIC) TOPONYMICAL INCONSISTENCIES AND MISSELECTION OF TRIANGULATION POINTS

EXAMPLES OF PEAKS ON LOŠINJ AND RAB ISLANDS DURING FRANCISCAN MILITARY AND CADAstral SURVEYS

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FRANCISCAN SECOND MILITARY SURVEY (1806 – 1869) AND STABLE CADASTER SURVEY (1817 – 1861)

- Carried out during the reign of emperor Franz I. (1768 – 1835, reign 1792 - 1835)

Mapping of Croatia during Stable Cadaster Survey:
- Istria: 1818 – 1822
- Dalmatia: 1823 – 1830 – hiatus – 1834 – 1838
- 1:2880 (1:2904 !) and 1:1440 scale („1 zoll =40 klafter” and „1 zl .=20 klf.”)

Mapping of Croatia during Military Survey:
- Istria: 1821 – 1824
- Dalmatia: 1851 – 1854
- Cassini-Soldner projection, Zach-Oriani elipsoid (a=6376130, f=1/310)
- Ferro prime meridian (17°39´16” east of Greenwich)
- Krimberg (Istria) and Wien (Dalmatia) mapping systems
- 1:28800 scale
First-order triangulation points of cadastral survey of Kvarner (Istria) and Dalmatia
(source: Ungarov, 1949, Solarić, 2008)
Survey of Kvarner (commanded by Cpt. Bossi) southernmost first-order triangle points on which survey of Dalmatia was planned to be attached:

- *Televrina* peak (also: *Mte Osero, Oserščica*) – 588 m (Lošinj island)
- *Sv. Ivan* peak (also: *Mte Calvario, Grgošćak ???*) – 230,7 m (Lošinj island)
- *Kamenjak* peak (also: *Tignarossa, Tinjarosa*) – 409,7 m (Rab island)

Survey of Dalmatia was commanded by 1\textsuperscript{st} Lt. Haan and Lt. Montanario, and they were ordered to attach the northernmost triangle to already existing *Mte Calvario – Tignarossa* line segment.

They were told that those trig point markers were left there by Cpt. Giacomo Marieni’s team during hydrological survey of Adriatic Sea in order to create *Carta di Cabotaggio del Mare Adriatico* map from 1818 to 1821 …
ERROR DURING THE SURVEY OF Dalmatia

- They couldn’t identify marker on the *Mte Calvario* peak, but they found ruined remains on the neighbouring peak (about 1430 m SE, measured on TK25) of similar height called *Grgošćak*, and they assumed it was Marieni’s marker.

- However, they made a mistake because Marieni used St. John church on *Mte Calvario* peak as a trig point, so their northernmost first order triangle (actually rotated cca. 2°) for survey of Dalmatia now consisted of points:
  - *Grgošćak* peak (also: *Gargošćak*) – 242,5 m (Lošinj island)
  - *Kamenjak* peak (also: *Tignarossa, Tinjarosa*) – 409,7 m (Rab island)
  - Sv. Vid peak – 349,1 m (Pag island)

- Error was discovered in 1827 during the third stage of survey that started in Varaždin in 1826 and was carried out southwards towards Dalmatia.
Area of Lošinj where misselection of trg points occurred (smaller scale)
(source: Ungarov, 1949, Solarić, 2008, mapire.eu)
Area of Lošinj where misselection of trg points occurred (larger scale)
(source: Ungarov, 1949, DGU, mapire.eu)
In order to avoid immense costs of repeating such endeavor to correct measurements, scale of cadastral maps of Dalmatia was simply transformed from 1:2880 to 1:2904.
Unfortunately, areas of peaks *Mte Calvario* (now *Sv. Ivan*) and *Tignarossa* (now *Kamenjak*) besides being marked as „geodetic survey crime scene”, also became some sort of victims of various toponymical inconsistencies on maps during last two hundred years.

**TOPONYMIC INCONSISTENCIES OF LOŠINJ PEAKS**

- Also, toponymical inconsistencies appear in papers that cover this particular matter („the error of 1:2904”), so it is sometimes difficult to determine which peak of Lošinj is being discussed at a moment.

<table>
<thead>
<tr>
<th>SOURCE, YEAR:</th>
<th>TOPONYM</th>
<th>GEOMORPH. FORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ivon, 1923</td>
<td><em>Kalvarij / Gargošćak</em></td>
<td>separate peaks</td>
</tr>
<tr>
<td>Ungarov, 1949</td>
<td><em>Pogled / Kalvarija</em></td>
<td>same peak</td>
</tr>
<tr>
<td>Ungarov, 1958</td>
<td><em>Kalvarija</em></td>
<td>one peak</td>
</tr>
<tr>
<td>Kosović, 1958</td>
<td><em>Kalvarija / Grgošćak</em></td>
<td>separate peaks</td>
</tr>
<tr>
<td>Slukan-Altić, 2003</td>
<td><em>Kalvarija / Grgošćak</em></td>
<td>separate peaks</td>
</tr>
<tr>
<td>Solarić, 2008</td>
<td><em>Pogled / Kalvarija</em></td>
<td>same peak</td>
</tr>
</tbody>
</table>
Toponyms of peaks of Lošinj on various maps
TOPONYMIC INCONSISTENCIES OF RAB PEAK

- *Kamenjak* peak was obviously named *Tignarossa*, according to map and written sources.

- However, *Kamenjak* is also a toponym used for the whole karst ridge that stretches from NW to SE

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<tbody>
<tr>
<td>Ivon, 1923</td>
<td><em>Tignarossa</em></td>
</tr>
<tr>
<td>Brusić, 1926</td>
<td>„<em>Tinjarosa, once knowns as Kamenjak (Camignaco)</em>” , actual peak is called <em>Straža</em></td>
</tr>
<tr>
<td>Ungarov, 1949</td>
<td><em>Tinjarosa / Crvena Glavica</em></td>
</tr>
<tr>
<td>Ungarov, 1958</td>
<td><em>Tignarossa / Crvena Glavica</em></td>
</tr>
<tr>
<td>Kosović, 1958</td>
<td><em>Tignarossa</em></td>
</tr>
<tr>
<td>Bognar, 1989</td>
<td><em>Tinjaroša / Kamenjak</em></td>
</tr>
<tr>
<td>Slukan-Altić, 2003</td>
<td><em>Tignarossa / Kamenjak</em></td>
</tr>
<tr>
<td>Pahernik, 2007</td>
<td><em>Tinjaroša / Kamenjak</em></td>
</tr>
<tr>
<td>Solarić, 2008</td>
<td><em>Crvena Glavica</em></td>
</tr>
</tbody>
</table>
Toponyms of peak *Tignarossa* and surrounding area on Rab on various maps.
Toponyms of peak *Tignarossa* and surrounding area on Rab on cadaster map
CONCLUSION

- Toponyms can often be the most inaccurate information given on a map or in various written sources, especially if they are taken for granted and without consulting local people.

- There is a possibility that misunderstanding of toponyms, i.e. their actual locations (and lack of communication with local people) led to selection of wrong peak during cadastral survey of Dalmatia.

- Correct writing of toponyms should be of the prime interest for cartographers and other people involved in map making as same as positioning them accurately.

THANK YOU FOR YOUR ATTENTION!