International workshop on GIS, Remote Sensing and Geoarchaeology

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Practical 4 -> QGIS extract features from historical maps

Aims of the training

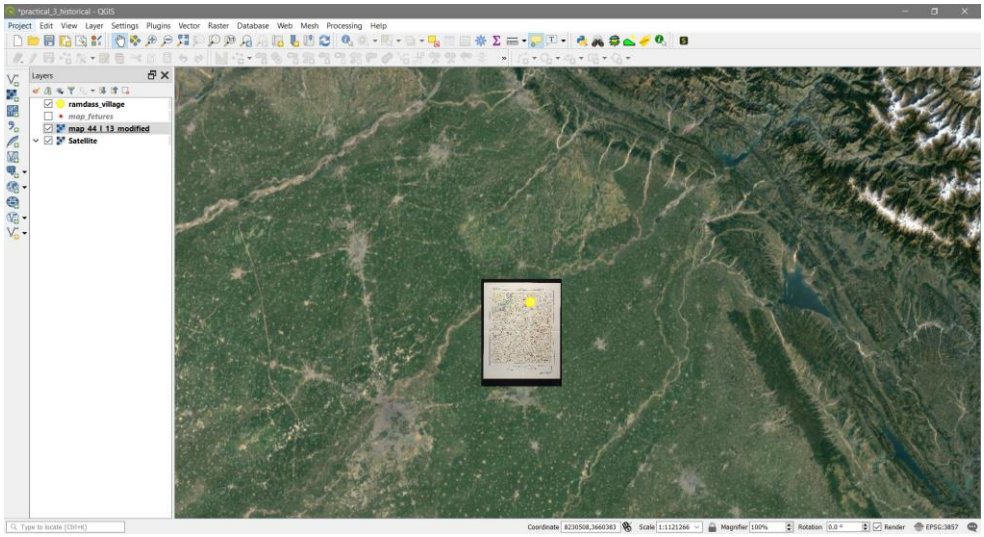
- Digitalise new vector data (shapefile) from a georeferenced historical map.
- Identify and detect distinct lab icons and markers that can be interpreted as past archaeological sites, such as mounds, or other historical features (e.g. forts, Muslim cemeteries or shrines and temples).
- Change visualisation and symbology settings in QGIS.

Required software and data

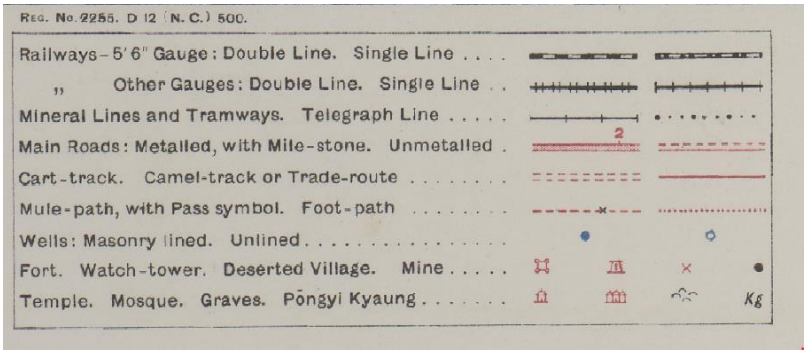
- QGIS with Google image basemap (see practical 3).
- Shapefile "ramdass_village"
- Georeferenced Survey of India map n. 44 I/13 from Practical 3.

Instructions

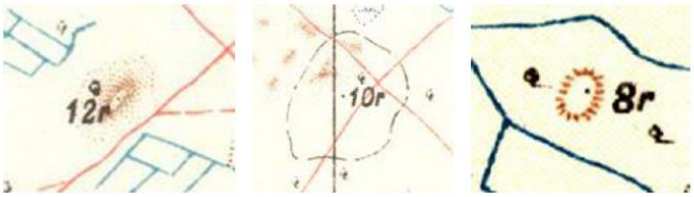
1. In the previous practical, we georeferenced a 1-inch Survey of India map covering the area of Ramdass village in Punjab. The QGIS canvas should look like this:



2. A close examination of the map suggest tat there are some features that can be related to past archaeological sites. See also the legend of the map at the bottom of the image:



Other examples from similar landscapes in north-western India have also reported this type of markers and icons, as suggested by the recent study of *Petrie et. al. 2019* (included in the GitHub folder):

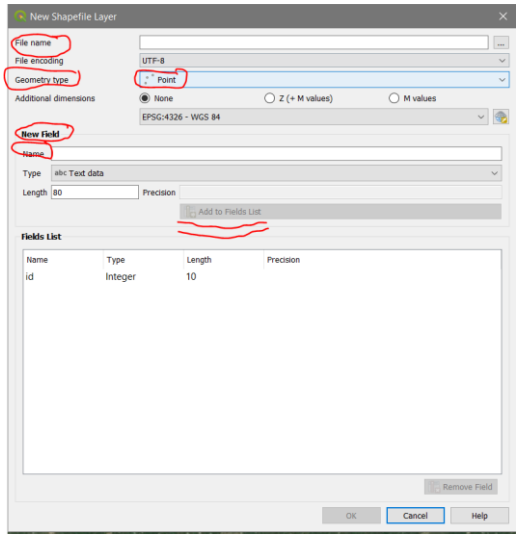


3. In our new map, each new digitalised feature will be a new **vector point** with an assigned category (e.g. *mound*, *fort*, *shrine,* among others). To start digitalising features, we must create a new **shapefile** -> this is the most common geospatial type of data for vectors. We will add the new features in a unique shapefile file. To do this, go to the main menu *Layer/Create Layer/New shapefile layer*.
4. In the *New Shapefile Layer* window that prompts, add a name for your new shapefile data. What about to write something like "*map_features*"?

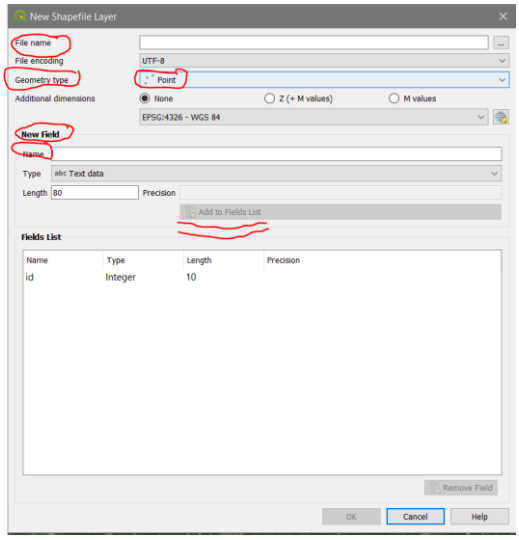
   Make sure that *Geometry* type is set to.. point!

   In the *New Field command*, write "*type*" in the new name white dialogue box. 80 characters length should be ok. Then *Add to Fields* List the new entry. This **Type** new attribute will allow us to **classify** or **assign categories** on the way the different types of features in the old map.

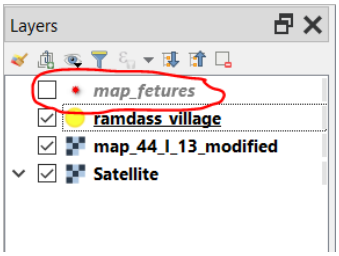
   We can also delete the *ID* field in the *Fields List*, since we are not going to use it for now.



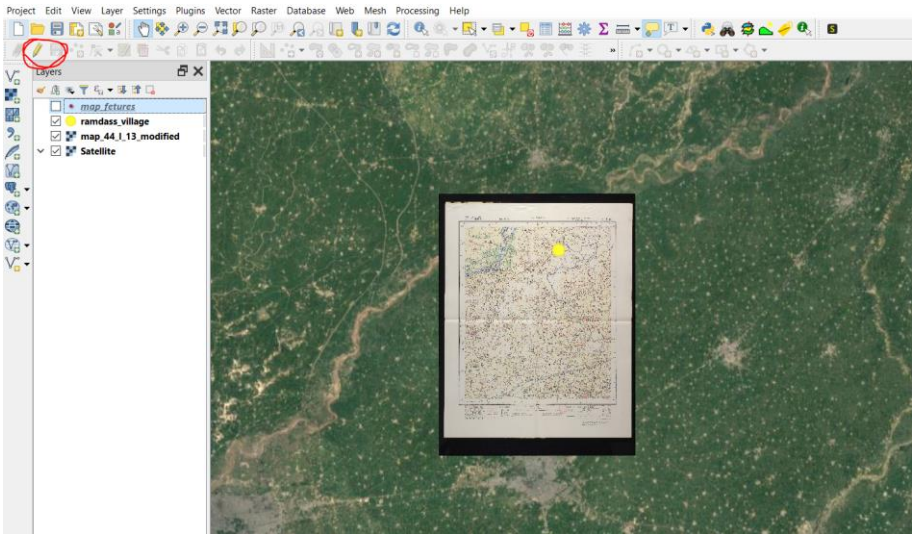
5. Your new shapefile window should look like this:



6. When Ok, a new layer showing your "*map_features*" should be added to the main *Layer* List. This shapefile, however, doesn't contain any data yet -> it's empty!



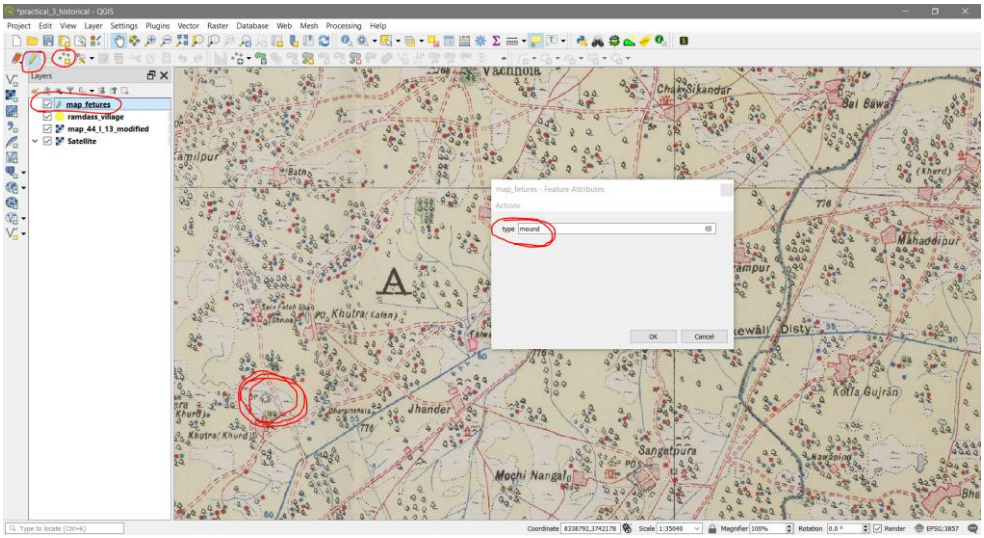
7. To add data to our empty shapefile, we must start **editing** it. To do this, select "*map_features*" in the *Layer* list, and toggle the pencil icon. This will automatically **enable** the editing of your data.



8. When the *Toggle Edition tool* is ON (the pencil icon), we can start adding points directly from the georeferenced map by selectin the *Add Point Feature* (the three-dots icon next to the pencil).

   Now you are ready to click and add features! Every time to click to a potential feature of interest, a dialogue box will open asking you to define a **category** for each point. You may thing to add one of the following categories accordingly to your observations:

   Mound / Fort / Shrine / Graves / x (or deserted)



9. *Have you completed your observations? How many features have you digitalised?*

We will stop this practical here. If you have already finished and want to explore a little more of QGIS on your own, please let us know and we'll happy to guide you to more advanced features.