



Project no. 018340

Project acronym: EDIT

Project title: Toward the European Distributed Institute of Taxonomy

Instrument: Network of Excellence

Thematic Priority: Sub-Priority 1.1.6.3: "Global Change and Ecosystems"

C5.111 MapViewer version 3: The EDIT MapViewer with enhanced functionality

Due date of Component: Month 54

Actual submission date: Month 54

Start date of project: 01/03/2006

Duration: 5 years

Organization name of lead contractor for this component: CSIC, RMCA, IBSAS, CUB, HNHM

Revision: final

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

This report provides a description of capabilities and applications of the 3rd version of the EDIT MapViewer. It was compiled by Marcin Gąsior with a generous input from Patricia Mergen, James Davy, Franck Theeten and Pere Roca Ristol and the colleagues from the EDIT developer mailing list.

Introduction

The EDIT MapViewer, together with EDIT Map REST Service, is being established and developed under Work Package 5.4. It is an online toolbox for taxonomists, offering data visualization and analysis as well as maps preparation for publications.

Its first implementation was through the Mapbuilder Ajax framework, but since version 2 the tool has been ported to the OpenLayers framework. Moreover the MapViewer was migrated from CSIC's server at Madrid to new server at Museum for Central Africa (RMCA) at Tervuren.

Unfortunately the server at CSIC has received a serious hacker attack before the latest version was transferred to RMCA and some code and configuration were lost. RMCA could only use an earlier version of the code provided by Pere Roca Ristol (the former lead developer of the MapViewer). That is why many functions had to be restored, configuration of the software and the library files needed to be re-established. These issues along with the completion of features, resolving bugs, and compatibility problems are a cause of some delay in the MapViewer's release and limitation of introducing new capabilities.

Currently the EDIT MapViewer with majority of functionalities restored is available at:

http://edit.br.fgov.be/edit_wp5/geo/mapviewer/edit.html

Documentation videos for CSIC's version can be found at:

http://193.190.116.10/edit_wp5/edit_info/edit_videos.html

MapViewer capabilities and refinements

- The whole application received a new layout and styling. All the code was revised and cleaned and archived in reorganized SVN repository.
- Diverse environmental, geographic and administrative layers are available for creating customized maps (see Fig. 1 in Annex).
- Uploading user data:
 - Improved security of service – only CSV files are accepted by application
 - Data symbolization enabled by third, fourth or third and fourth field in uploaded CSV (see Fig.2 and Fig. 3). In most cases third and fourth field will be genus (third) and species (fourth), but other kind of data is possible (yet in that case spatial analysis has no sense).
- Printing options were enriched by the function of generating keymap for a zoomed area of species occurrences. User can select a reference area (world or specific continent) and get an image of location of working area (see Fig.4)
- Modules
 - 'Projections' is a new module which allows to chose predefined projected coordinate system or simply 'projection' (users are no longer limited to print maps in latitude/longitude). Firstly one has to select area (continent) to reproject, next chose between UTM and equal-area projections and finally select desired projection (see Fig.5). After getting information about selected projection, it can be applied. For now, available projections are limited to those which EPSG code is supported by Geoserver by default. Projections module working can be seen in Fig.6.

- ‘Google and others’ is a new module which enables connection to high resolution maps from Google or Yahoo to make the produced maps more attractive (see Fig.7).
- ‘Spatial Analysis’ – statistics about the data points can be visually related to a chosen area layout (UTM squares, quadricule grids, province borderlines) for a quick assessment of gathering effort and biological importance of these areas. For more information compare the report C5.110 and C5.039.
- ‘GBIF data’ – through a direct link with the Global Biodiversity Information Facility (GBIF) API interface, the GBIF data records can be browsed and visualized on the map in addition to user’s data points. For more information see the report C5.072.
- ‘Query and draw’ – user are enabled to define their area of interest drawing a polygon on the map. Similarly to symbolizing data point, a polygon can be represented with selected width, color and opacity of a stroke and fill. Moreover, user defined areas (polygons) can be used to query the records within the polygon (see Fig.8).
- ‘Other tools’:
 - *Boxes tool* – a new tool for displaying an extent of occurrences in user data (see Fig.9). It is possible to mark an extent of selected genus or species.
 - *Data manipulation* is a new helpful tool for restricting the display of occurrences data. Selected information from third field can be hidden or even removed from displaying symbols to avoid obscuring more important elements (see Fig.10).

Conclusion

The EDIT MapViewer is an easy to use and convenient comprehensive tool for dealing with spatial taxonomic data. Currently the application allows users to perform many tasks, such as: visualize occurrences data, create camera ready maps with custom background layers, perform basic spatial analysis. It is a valuable supplement for traditional tools for taxonomists.

Annex: Figures and maps

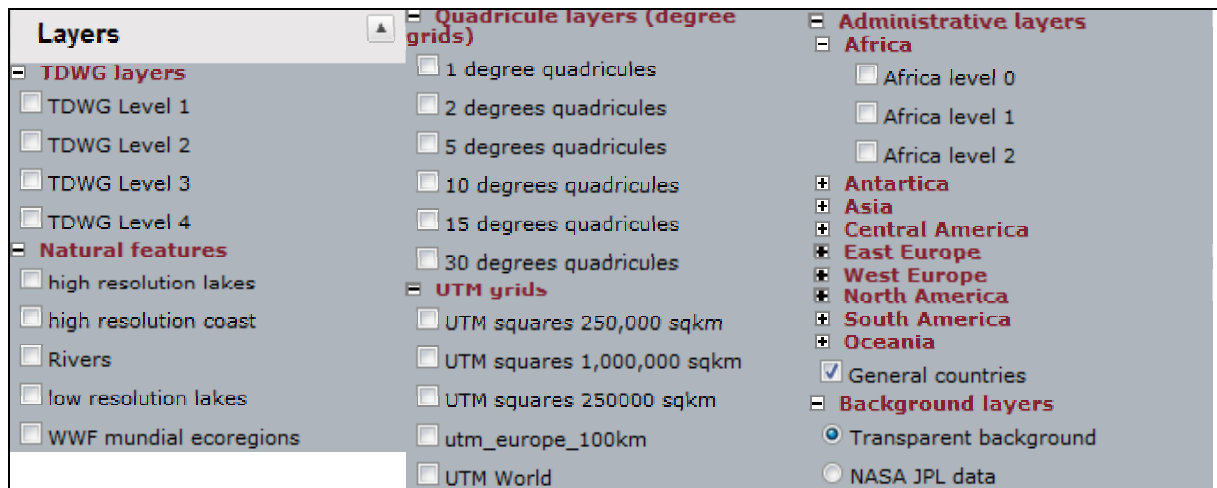


Fig. 1 Layers

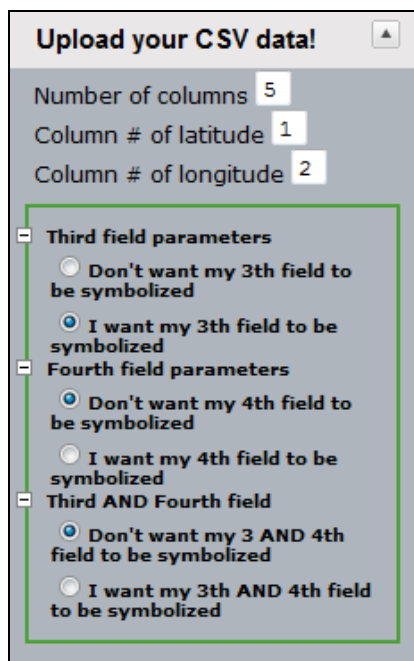


Fig. 2 Third and fourth field symbolization

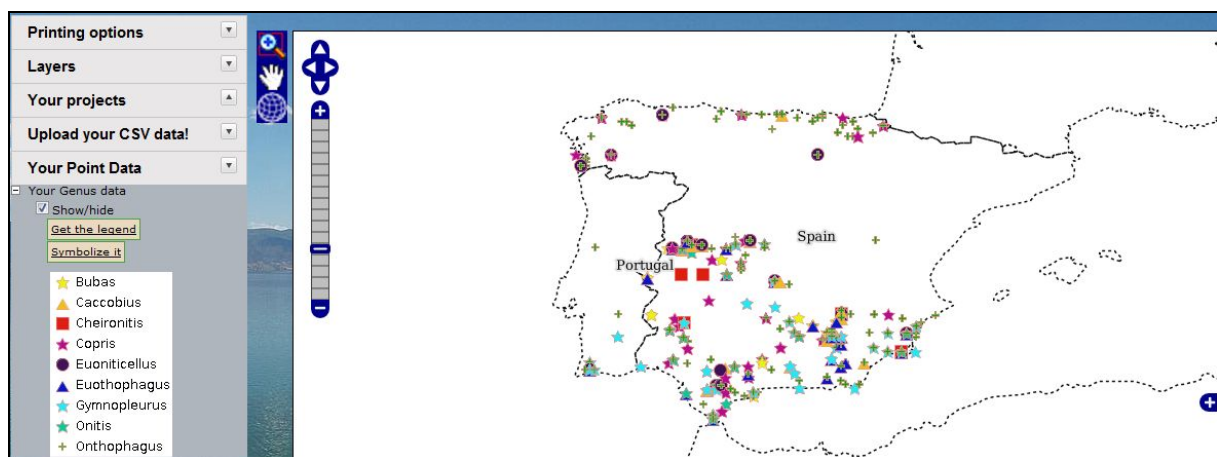


Fig. 3 Example of symbolization by third field

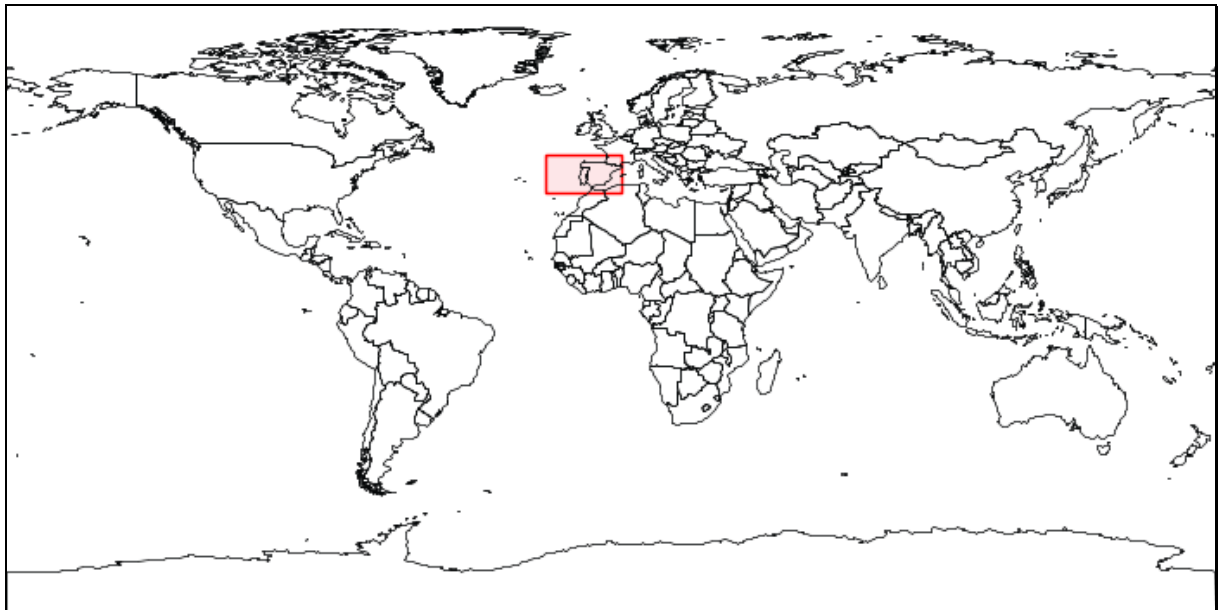


Fig. 4 Keymap for working area

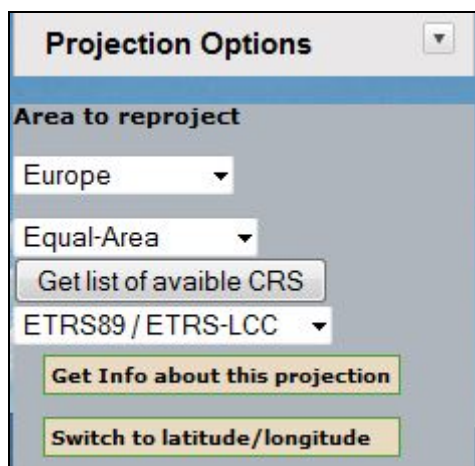


Fig. 5 Selecting of projected coordinate system

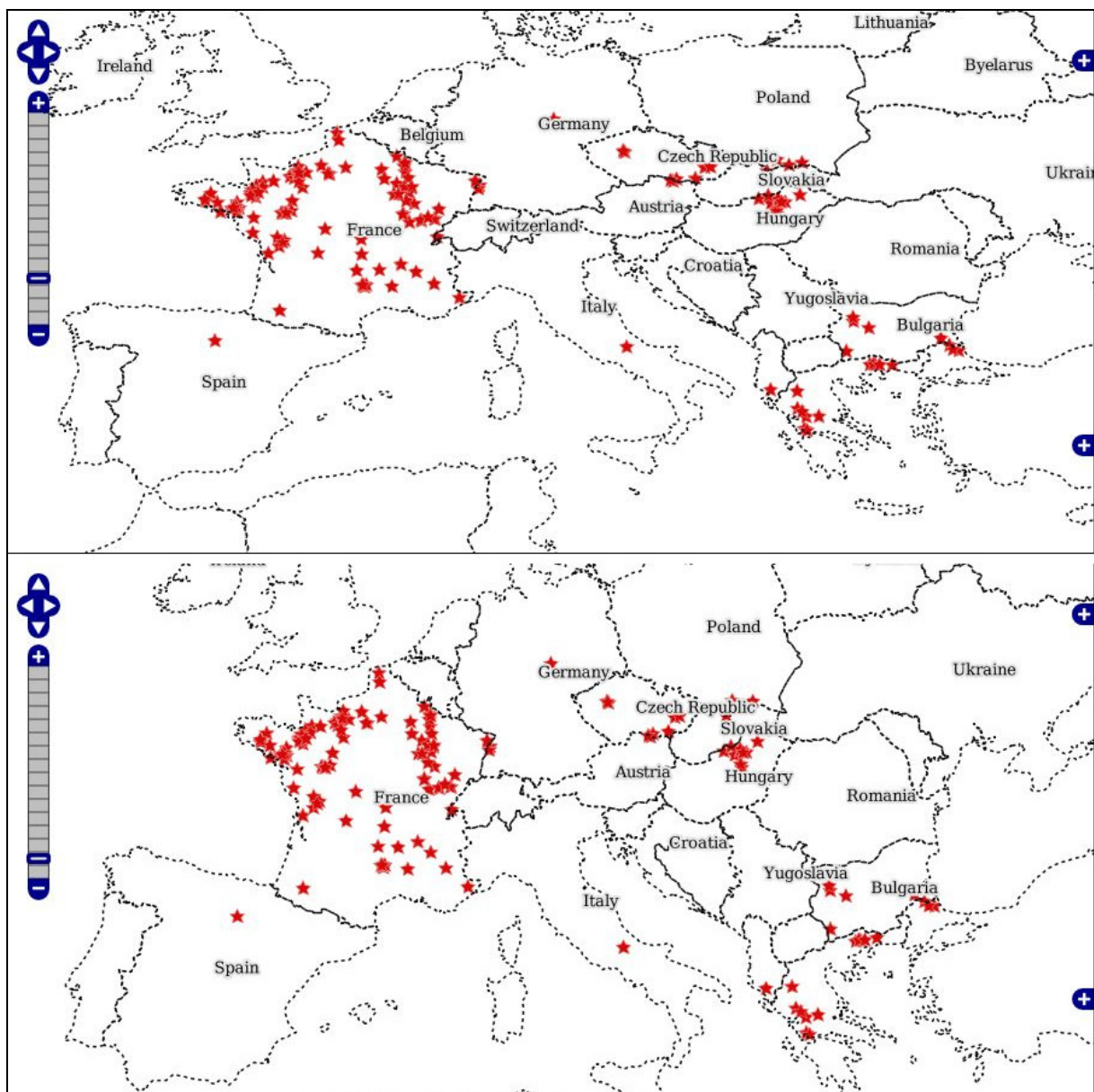


Fig. 6 'Projections' module working (above – longitude/latitude; below – equal-area projection)

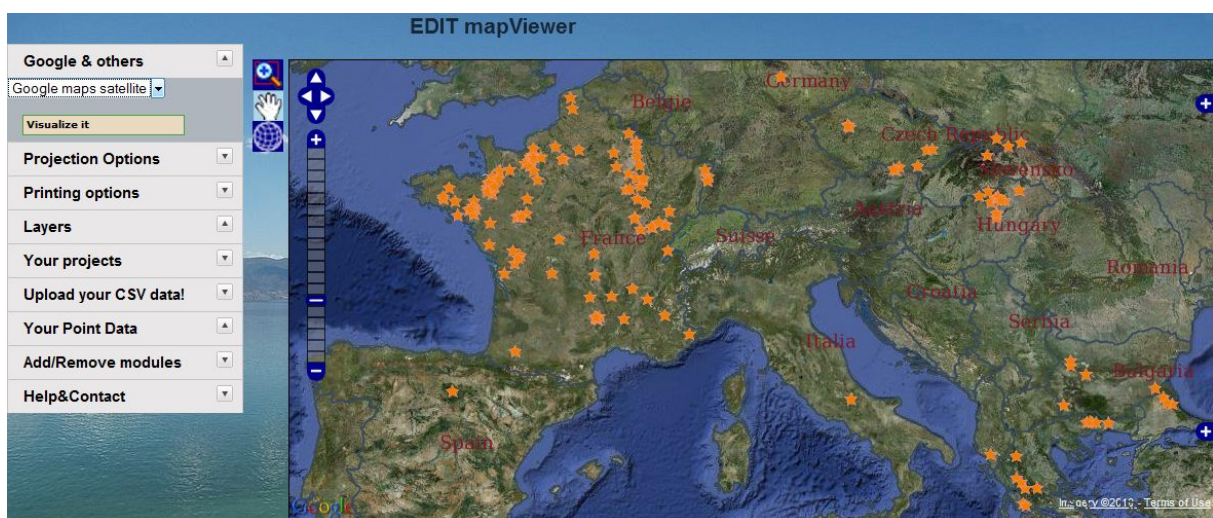


Fig. 7 Google maps layer displayed with occurrences data

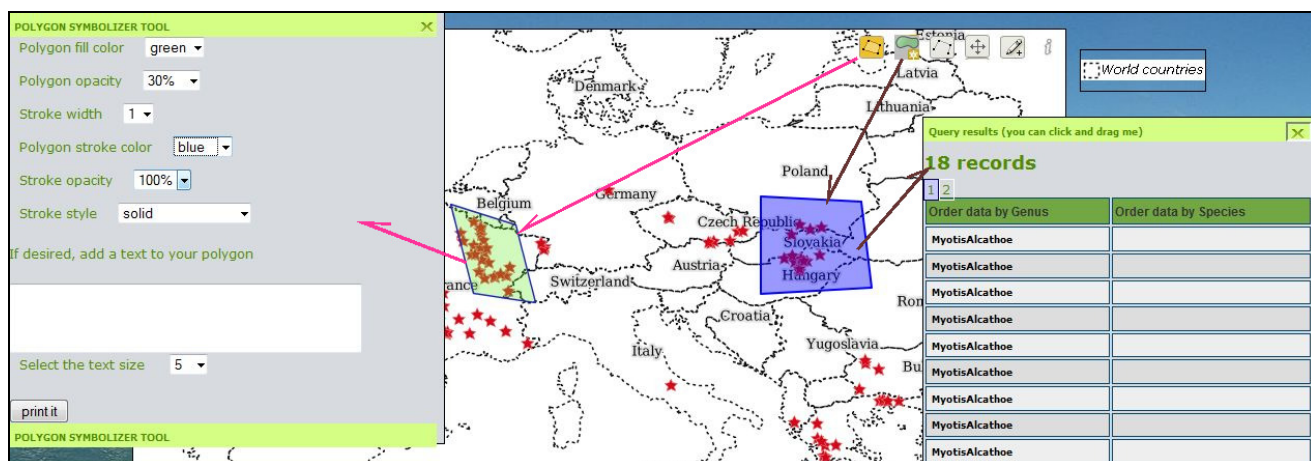


Fig. 8 Example use of 'Query & Draw' module

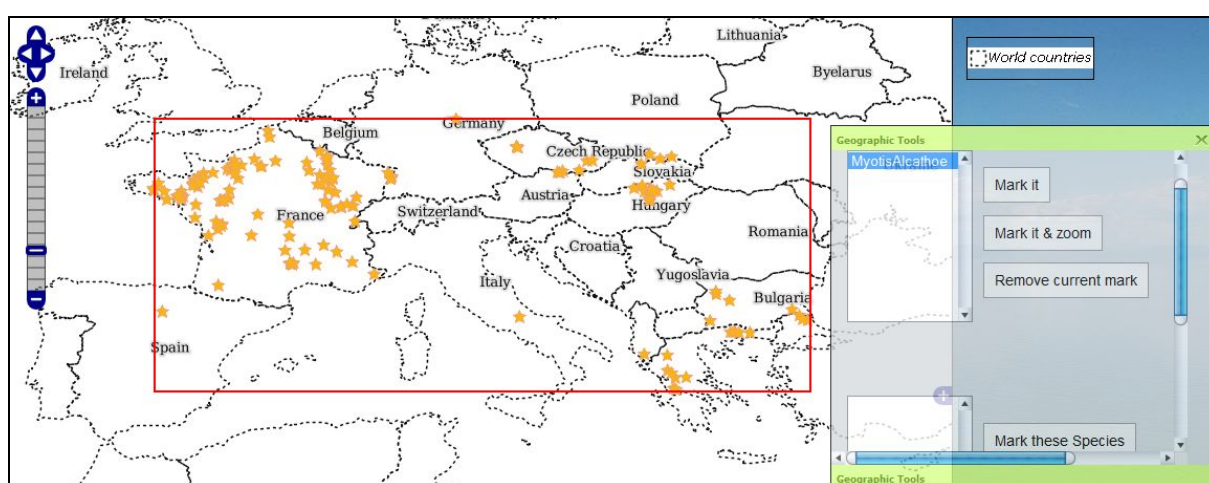


Fig. 9 Boxes tool for selecting occurrences extent

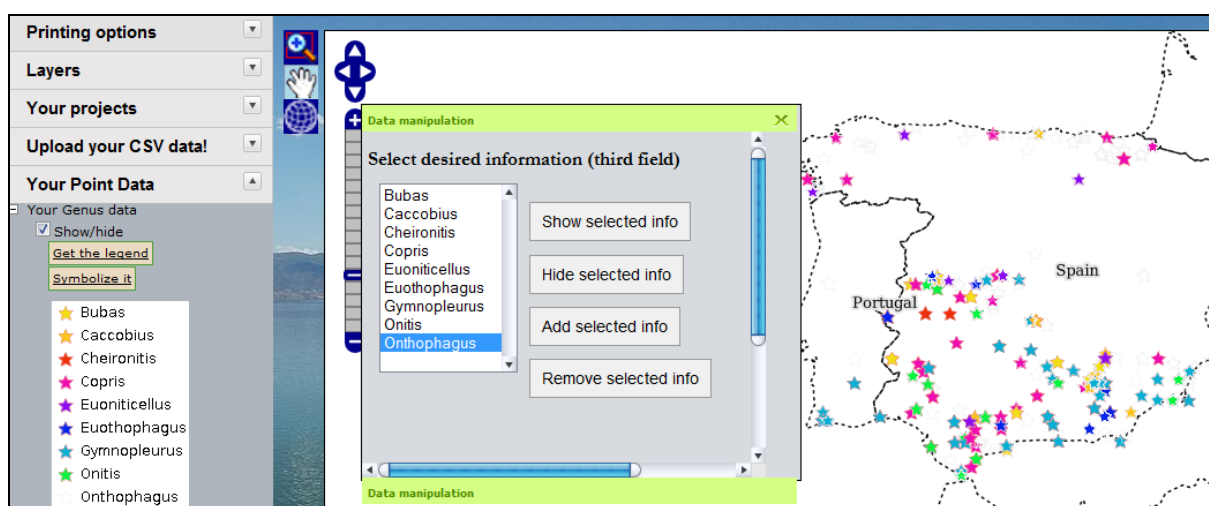


Fig. 10 Data manipulation tool – Onthophagus species markers are hidden (only light grey outlines left)