

The GHR Project: New tools and strategy for an historical geotourism

LIBERA PAOLA ARENA

Center for the History of the Mountains, Material Culture and Earth Sciences, University of Insubria, Via Ravasi, 2, 21100 Varese VA, Italy
(E-mail: libera.arena@gmail.com)

ABSTRACT

The GHR project (*GeoHistorical Routes*) aims to create geo-historical touristic itineraries both digital and real by means of a multidisciplinary approach. It is organized into three working groups: research, ICT, communication and education. Through a solid work of historical research the itineraries are realized in order to follow the same steps undertaken by scientist-travelers of the past, such as Carlo Amoretti (1741-1816), an Italian eclectic polymath and traveler. In this paper I show a geo-historical digital path for some of the Amoretti's trips, that is planned to be available for the users of the net. The added value of the GHR project is the integration of different skills (historical, geological, cartographic, local management and computer science) which are able to link web and digital technologies to the needs of territorial sustainable development through the promotion of geotourism.

Keywords: geotourism, history, geoscience, scientific travels, technology.

INTRODUCTION

Could the historical research play a role in the contest of geoheritage, geoconservation and geotourism? The idea to follow the steps of scholars, scientists, voyagers of the past could be an interesting approach for the geotourism (Allan, 2012; Dowling & Newsome, 2010; Hose, 2008). We define *Historical Geotourism* the use of historical sources as a concrete scientific tools for the reconstruction of the geological history of a given area, following the footsteps of scientists and explorers of the past (Vaccari, 2005); not easy to do but not impossible. Diaries, letters and primary sources, in particular of the 18th and the 19th century, could be a precious cultural heritage of geo-mineralogical knowledge about the practice of travel and could be used today for the enhancement of geotourism (Hose, 2012).

METHODOLOGY

The GHR project¹ aims, on one hand, to enhance and to protect the historical and environmental heritage and, on the other hand, to make accessible to the general public and to the schools those historic and scientific richness of our territory often forgotten. We intend to achieve this goal through a combination of complementary skills and an interdisciplinary way to enhance the geotouristic offer that so far is few widespread. Our method is organized into three steps, each one managed by a GHR team characterized by specific skills (Fig. 1), as described in the following.

RESEARCH TEAM

Made up of teachers, researchers, PhD

¹Italian website: <http://itinerarigeostorici.jimdo.com/>



Fig. 1 The GHR working teams organisation

students from universities with different backgrounds (historical and scientific), this team works to achieve the first goal of the project: the historical reconstruction of significant routes. Through the reading of the historical sources, published and unpublished (travel guides, diaries, letters, etc.), this group have to highlight significant issues related to the geological scenery between the 18th and the 19th century, during the birth and the institutionalization of the geological sciences. Therefore, the historical traces left by this type of work permit to reconstruct a cross-section of the history of geology from a non-conventional viewpoint.

INFORMATION AND COMMUNICATION TECHNOLOGY TEAM

This second team is formed by ICT developers and its goal is to create all the virtual contents for the net using multimedia instruments for managing the website for the transmission of content, the

socialization and the sharing among the users. Through the portal users can share experiences, engage in discussions and suggest specific topics that will be examined by the experts of the GHR team. The creation of a mobile application will be essential. The app will be integrated with the portal, with specific locations along the route marked with GPS and qr code, as well as with the major social networks (facebook, twitter, google+, youtube, vimeo) and enriched with features of augmented reality through camera and gyroscope of modern devices.

EDUCATION AND COMMUNICATION TEAM

This third team, consisting of advisers, experts in communication and teaching and translators, has to spread the content created during the first two steps of work to the general public using all kind of media, different levels and languages. Particular attention should be done to the schools, creating educational content to improve the

educational tourism of the local area. The team is expected to create advertising campaigns in schools and associations and marketing campaigns on search engines, to use travel agencies as a promotional channels; to write newsletters for maintaining the client pool; to offer promotions and discounts, events and conferences. Nowadays, this working step is only planned but we expect to achieve this goal as soon as possible.

OTHER PROFESSIONAL COMPETENCES

The GHR project will be complemented by external consultancy services according to the need, for example we think to use the knowledge of expert guides (mid-mountain guides and caving) for the GHR tours that require this kind of professionalism.

A natural consequence, using this kind of working method, will be the enhancement of natural environment (mountains, hills, lakes, rivers) containing historical and

scientific peculiarities (Brox, 2008; Candela, 2009) in cooperation with local municipalities and local authorities.

RESULTS

Nowadays this type of historical research has been tested for the study of some handwritten letters of Carlo Amoretti (1741-1816), a Ligurian polymath that lived between the 18th and the 19th century (Bossi 1819; Labus 1824) and author of a particular travel guide *Viaggio da Milano ai laghi Maggiore, Lugano e Como, e sui monti che li circondano* (Amoretti, 1794). First, we have studied and then reconstructed some routes of geological and naturalistic tasks taken from the Amoretti's diaries written in the late 18th century (Vaccari 2005). It is important underline that we have used the Amoretti's published and unpublished written (Amoretti 1794; ILASL), as a concrete scientific tools for the reconstruction of the geological history of a given area.

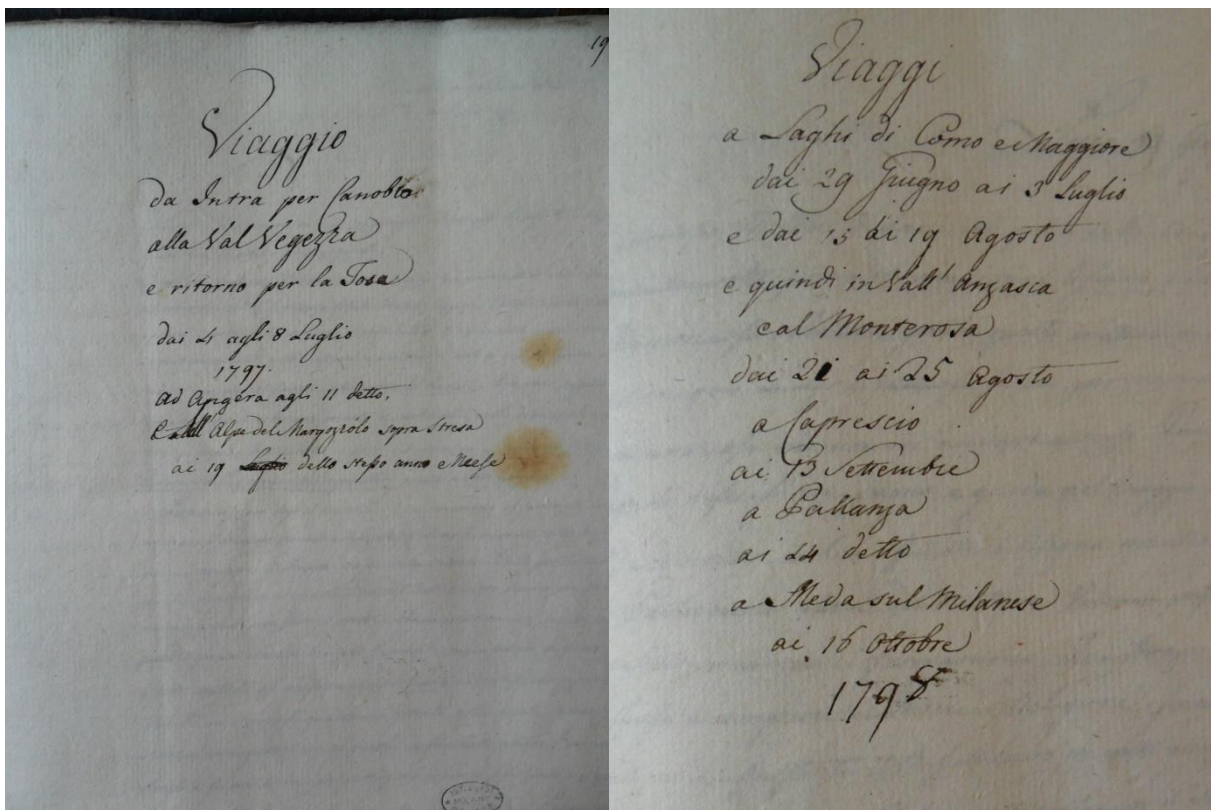


Fig. 2 The frontispieces of the handwritten Amoretti's letters of the 1797 and 1798

RECONSTRUCTION ON THE FIELD: FROM THE TEXT TO THE GEOGRAPHICAL LOCATION

During the summer 2010, with the manuscripts sources in the hands (Fig. 2), I tried to follow the same steps made by Amoretti in 1797 and 1798 in the Piedmont area of Intra, Ossola, Vigezzo and Cannobina Valleys and observing what he saw during the route (Tab. 1).

While the identification of the general track of the paths that Amoretti accomplished was not difficult (thanks to the precision of the geographical information provided by Amoretti) the localization of specific observation points has been more complex. This is due, both to the lack of accurate data in the sources, and to the different landscape conformation caused by more than two centuries of human and natural changes and transformations.

After this reconstruction on the field, through the historical sources of some geological and naturalistic trips made by Carlo Amoretti in the late 18th century, it was possible to draw interesting conclusions about the Amoretti travel arrangements and in particular retracing, more or less exactly, the trail and the geological observations made by Amoretti.

VIRTUAL TOUR: FROM THE GEOGRAPHICAL LOCATION TO THE DIGITAL ROUTE

The second step was the creation of geo-historical digital paths of the reconstructed Amoretti's trip planned for the users of the net. Through the use of the *Google Earth* application, it was possible to compare the historical maps with the current ones, tracing the path followed by the scientist-traveler, identifying places and points of litho-geo-mineralogical interest and so on. The application, under construction, could provide users with a complete picture of all possible information for a geohistorical hike. In particular, the planned application based on *Google Earth*, gives three possible options: paths, geo-litho-mineralogical observations and maps. Choosing the option 'paths', the user could further choose between areas and years of interest. For example choosing the Intra valley, *Google Earth* displays two excursions: to the Simmolo and Torriente mount (Fig. 3); or choosing the Ossola Valley, the application shows the path of that area.

For the 'mineralogical observations', the user of the net could choose a particular object of interest from the options created on the basis of the Amoretti's mineralogical classification. He divided the mineralogical

Tab. 1 The reconstruction in 2010 of six routes made by Amoretti between 1797 and 1798.

	Date Amoretti's trip	Location of reconstruction trip	Mineralogical observation
	January	Cimolo (Simmolo) Mount	"trappo" ²
1797	4-9 July	Intra to Vigezzo Valley through Canobina Valley and Ossola Valley	Kaolin
	19 July	Treffiume (Baveno – Maggiore Lake)	Peat
	3 July	Baveno	Granite
1798	20 August	Macugnaga, Lower Ossola Valley	marble, gold mines
	13 September	Torriente (Turrione) Monunt	"trappo"

² Amoretti performed chemical analysis to understand the composition of his rock and he expressed the idea that it was a sort of basalt.



Fig. 3 Option "paths" to see the routes in a certain area.

objects in four classes: 'simple lands and stones' (silica, clay, magnesia, lime, trap); 'simple minerals' (salts, nitrates, muriates, carbonates); 'fuels' (native sulfur, bitumen, plumbago) and 'metals' (platinum, gold, iron, silver, copper). For example, choosing the trap, the user could see on *Google Earth* the point where Amoretti observed and found this particular stone. The same could be seen for granite or other mineralogical objects observed by Amoretti (Fig. 4).

The third option planned for this virtual tour is the 'maps'. The users could overlap different maps, for example put a modern map on a past one, highlighting the geographical difference of the routes (Fig. 5).

This interactive tour could be enriched by a number of other geological and cultural information and by the use of technological tools like the GPS systems, that could give the opportunity to create geo-located paths. To this end, a collaboration among experts in different fields of geological and computer science, tourism and local government would be fruitful. The final application could provide users with a complete picture of the necessary

information to explore directly on the field the geo-historical routes of interest.

DISCUSSION AND CONCLUSIONS

Nowadays we have only partially achieved the GHR project idea. We need to realize the third step, the communication and education process and to improve the other two steps because we want to include the GHR tours in the tourism market and in the field of natural and cultural heritage. In addition, we want to implement the creation of the GHR tours studying many others scientists of the past, inserting the GHR project in a bigger project idea, that wants to create an international network, to coordinate the different geosites, geoparks and geo routes, planned by professor Ezio Vaccari, of the Insubria University of Varese (Italy). Many are the manuscripts and the historical sources (for example: De Robilant 1786; Pini 1792; De Saussure 1779; Breislak 1801; De Dolomieu 1797; Santi 1806; Spallanzani 1792; Young 1792) that are waiting someone that took them again in life for

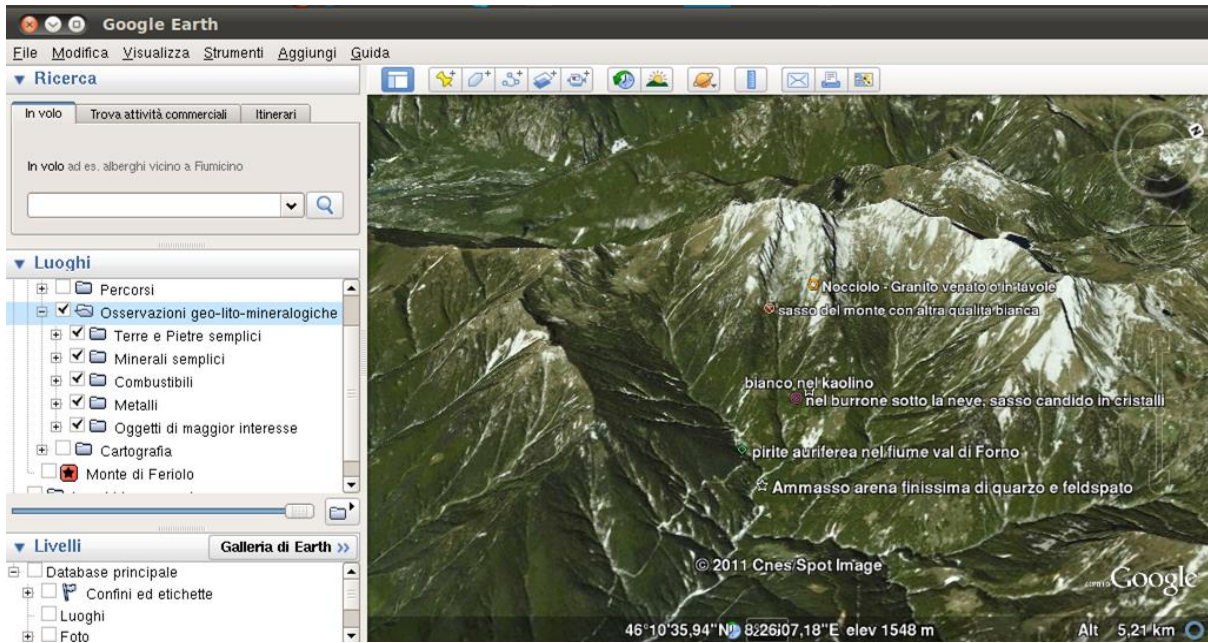


Fig. 4 Option "Mineralogical observations" to see where Amoretti found the different mineralogical object that he observed.

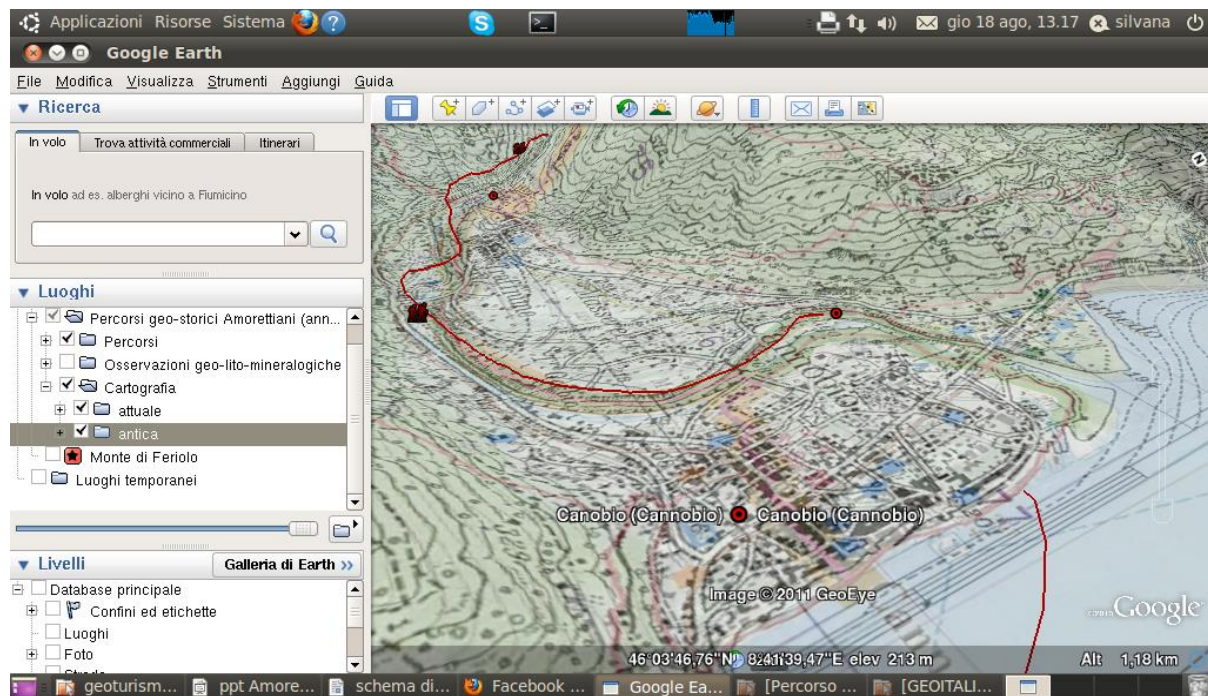


Fig. 5 Option "maps" to see and compare different maps in the area.

creating new geo-historical paths usable by the general public and for all of them that wish to make a natural walking as a cultural and scientific travel in the past. To reach this goal, the keyword is 'synergy' of different skills. Only in this way the GHR project could create, in an original and innovative way, a bridge between two

worlds: History and Earth Sciences, allowing the users to be involved in the discovery of the land where they live.

REFERENCES

Allan M. (2012) Geotourism: Toward A Better

- Understanding Of Motivations For A Geotourism Experience (A Self-Determination Theory Perspective), Lap Lambert, Academic Publishing.
- Amoretti C.** (1794) Viaggio da Milano ai tre laghi, di Lugano, Maggiore e di Como e né monti che li circondano. Galeazzi Giuseppe, prima edizione, Milano. Other Editions: 1801, 1806, 18014, 1817, 1824.
- Amoretti C.** (1798) Sul tarppo d'Intra e del monte Simmolo. In: Memoria della società italiana, tomo VIII, parte I, 46.
- Arena L. P.** (2011) Finding and Using peat and coal in Northern Italy between the Eighteenth and the Nineteenth century: fieldwork instructions in the writings of Carlo Amoretti. In: History of Research in mineral resources, Istituto Geológico y Minero de España, 2011, 253-262.
- Arena L. P., Candela A., Gerali F., Luzzini F. and Vaccari E.** (in preparation), Viaggi geologici nelle aree montane dell'Italia settentrionale. La ricerca sul campo nei luoghi della stratigrafia del Settecento.
- Bossi L.** (1819) Dizionario portatile di geologia, litologia e mineralogia, Gieglar P., Milano.
- Bossi L.** (1819) Eleogio letterario dell'abate Don Carlo Amoretti. In: Memorie della Società Italiana delle Scienze residente in Modena, Tomo XVIII, fasc. I, Modena.
- Breislak S.** (1801) Voyage phisiques et lytologiques dans la Campanie, Dentu Imprieur.
- Brox M.** (2008) Geoheritage, from global perspectives to local principles for conservation and planning, Western Australian Museum, Perth, Western Australia.
- Candela A.** (2009) Tutela e valorizzazione del patrimonio geologico. In: Nuova Museologia, 20, 7-11.
- De Dolomieu D.** (1797) Rapport sur les Voyages in 1797. In: Journal des mines, VII, 385.
- De Robilant E-B N.** (1786) Essai Géographique suivi d'une topographie souterraine, minéralogique, et d'unedocimasie des états de S.M. en terre ferme. In: Mémoire de L'Académie Royale des sciences 1784-85, Briolo Torino, 191-306.
- De Saussure H.B.** (1779) Voyage dans les Alpes, précédés d'un essai sur l'Histoire Naturelle des environs de Genevre, Neuchâtel, Genève, 4 voll, 1779-1796.
- Dowling K.R. and Newsome D.** (2010) Global Geotourism Perspectives. Goodfellow Publishers, Oxford.
- Hose T.A.** (2008) Towards a history of geotourism: definitions, antecedents and the future, in C.V. Burex, C.D. Prosser, «The history of geoconservation», Geological Society, Special Publication 300, pp. 37-60.
- Hose T. A.** (2012) 3G's for Modern Geotourism, in «Geoheritage Journal», 4: 7-24.
- ILASL** (Istituto Lombardo Accademia di Scienze e Lettere), Milano. Fondo Amoretti. Fald. XXIV, Viaggio letterario-scientifico; Box Miei Viaggi.
- Labus G.** (1824) Vita di Carlo Amoretti. In: Silvestri, G. (ed) Viaggio da Milano ai tre laghi, di Lugano, Maggiore e di Como e né monti che li circondano. Giovanni Silvestri, VI edizione, Milano, 9-40.
- Pini E.** (1792) Viaggio geologico per diverse parti meridionali d'Italia esposto in lettere. In: Memorie di Matematica e Fisica della Società Italiana di Scienze Naturali, IX, 118-230.
- Santi G.** (1806) Viaggio terzo per le due provincie senesi che forma il seguito del viaggio al Montamiata di Giorgio Santi, professore d'Istoria Naturale dell'univeristà di Pisa, Ranieri Proseperi, Pisa.
- Spallanzani L.** (1792) Viaggio alle due Sicilie e in alcune parti dell'Appennino, Comini B., Pavia 1792-1797.
- Vaccari E.** (2005) I viaggi mineralogici di Carlo Amoretti in territorio lombardo, tra Settecento e Ottocento. In: Istituto di storia dell'Europa Mediterranea (ed) Pratiche e linguaggi, contributi a una storia della cultura tecnica e scientifica. Edizioni ETS, Pisa, 251-259.
- Vaccari E.** (2005) Le istruzioni per i geologi viaggiatori. In: Bossi, M., Greppi, C.(eds) Viaggio e Scienza, le illustrazioni scientifiche per i viaggiatori nel secolo XVII, XIX. Olschki Editore, Firenze, 3-25.
- Young A.** (1792) Travels during the years 1787, 1788 and 1789, Rackham, London.