



The geological heritage of Piedmont Region: Turin a "Stone-Town"

Alessandro Borghi (1), Daniele Castelli (1), Emanuele Costa (1), Anna d' Atri (1), Giovanna Antonella Dino (1), Sergio Favero (2), Simona Ferrando (1), Chiara Groppo (1), Luca Martire (1), Rosanna Piervittori (2), Franco Rolfo (1), Piergiorgio Rossetti (1), and Gloria Vaggelli (3)

(1) Earth Sciences Department – University of Turin. Via Valperga Caluso, 35 - 10125 Turin, Italy (giovanna.dino@unito.it),

(2) Life Science and Biology Systems Department - Via Accademia Albertina, 13 - 10123 Torino, (3) IGG – CNR Via Valperga Caluso, 35 - 10125 Turin, Italy

The stone resources have always been a major source of material in the building and, in particular, as raw material to create the masterpieces of sculpture and architecture that are now part of the cultural heritage of the humanity. Therefore, knowledge of stone resources, their mineral-petrographic features, their use and quarrying and working techniques from antiquity to the present, can provide a broad overview of the historical and cultural significance of these materials, stressing the importance of a relevant economic activity in the history and traditions of different cultures that have developed over the centuries in the Mediterranean area.

In particular, in Piedmont, stone has always been the most widely used building material, characterizing the strong architectural identity of the city of Turin. Here the stone have been widely used in the historical and contemporary buildings, monuments and urban art. From Roman times to the '700, marbles were the rocks used in construction of more value. Starting from '800, granites and other silicate rocks were progressively used thanks to the development of technologies for their exploitation and processing.

The study of stone resources is also of particular importance for the proper preservation of architectural and artistic heritage. Often, the task of restoration of works of art was carried out with stones aesthetically similar to the originals for color. Only recently, chances to find the same original material, identifying the place of origin, has become object of study and interest.

The great variety of ornamental and building stones found in Turin is certainly due to the highly composite geological nature of our region. In Piedmont, in fact, there are geological features very different from each other as the western portion of the metamorphic Alpine chain, the sedimentary Tertiary Piedmont basin (Langhe and Monferrato) and a small sector of the Northern Apennine.

Turin Urban Geosite represents the symbol place of interaction between man and the geological environment also in terms of cultural resources and development of the territory.

This research provides a detailed list of the many historic and contemporary Piedmont stones, which over the centuries have been using in buildings and architecture. The main ornamental stones employed in Turin are being identified and characterized by the petrographic and mineralogical point of view in order to identify the belonging geological units as well as the quarrying sites. The creation of a comprehensive database on the Piedmont rocks used in buildings of historical and contemporary highlights of the city of Turin is expected by our research. It will include the full name of the rock (commercial and scientific), the location of the quarry site, the main applications in buildings and monuments of Turin, the macroscopic and microscopic description illustrated by extensive iconographic material.

Main emphasis will be given to the rock types used for external installation as easily seen during touristic city tours.