

## **Geosciences at the service of society in the experience of one of the fathers of Geoethics, Antonio Stoppani**

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Antonio Stoppani (1824-1891) was a great naturalist and passionate scholar of Earth Sciences who was able to use his knowledge and professionalism as an instrument of training, education and social promotion. He highlighted the importance of geosciences for cultural awareness and development of society during his historical time and actually can be considered a promoter of some of the basic principles of Geoethics.

Particularly he stressed the importance of human being as being capable, with the use of reason, to modify nature and to participate actively in shaping the Earth's surface, defining man as a real "geological agent". In his Course of Geology (1871-1873) he also introduced the term "Anthropozoic Era" to define the latest time period in which human action began to be significant and decisive. This intuition somehow anticipates the modern concept of the Anthropocene that will be elaborated later towards the end of the XX century.

He stressed in particular that man, unlike the other morphological agents, has the capacity and at the same time the responsibility to contribute, through knowledge and scientific progress, to a responsible and ethical management of the environment and of the georesources.

Furthermore, for a better research of the common good he strengthened the importance of dialogue and interdisciplinarity among the different sciences, between physical and human sciences, including ethics and metaphysics.

Particularly significant are the dimensions of beauty, harmony and "sacredness" that Stoppani found in nature and that he considered cause for attention, appreciation and respect of the geosphere. With these principles he somehow laid the foundations for Geoconservation and promotion of Geodiversity.

Albeit in the simplicity of his language, and for the knowledge of his time, he had a modern approach to the study of the Earth-system, embracing a perspective of dynamic relationships between the various components of the ecosystem. This vision is nowadays essential for a proper management of georesources, for the assessment and mitigation of risk, as well as for a more integrated growth of the human being in harmony and synergy with the ecosystem in which he lives: all these elements are strictly related with Geoethics.

The contribution of Stoppani is therefore of great significance in establishing the criteria that should guide researchers, scholars, educators, professionals and decision makers in their studies and activities in the field of Earth Sciences and he actually can be considered one of the fathers of Geoethics.