

The laboratory of subterranean biology “Enrico Pezzoli”: a new underground facility for zoological research.

Raoul Manenti[‡], Andrea Melotto[§], Benedetta Barzaghi[‡], Mauro Villa[|]

[‡] Università degli Studi di Milano, Milano, Italy

[§] Stellenbosch University, Stellenbosch, South Africa

[|] Parco Regionale del Monte Barro, Galbiate, Italy

Corresponding author: Raoul Manenti (raoulmanenti@gmail.com)

Abstract

Since the beginning of subterranean biological research, the development of underground laboratories has provided scientists with protected places to perform long-term studies and to collaborate with others across subjects. However, aided by advances in technology for research centres and universities and by concerns for the conservation of natural subterranean environments, most of past subterranean laboratories went under the radar of the institutions that owned them.

Here we describe a new underground facility that was built in Italy by the Regional Park of “Monte Barro” (Lecco, Lombardy) and dedicated to the memory of Enrico Pezzoli who was strongly active in the study of spring and cave biodiversity.

The laboratory has been established by repurposing an ancient draining gallery of the Park; it has been conceived to study local fauna, especially that of local aquifers. Removable equipment has been set stretching along the gallery, from the beginning to deep sections, creating distinct sectors with different conditions allowing to rear, study and compare both troglophile and troglobiont species. In every sector of the laboratory independent blocks with different controlled conditions of light and biotic features can be easily placed and used to rear individuals of both invertebrates and amphibians. Experimental activity does not prevent the exploitation of the gallery by local fauna, with spiders, crustaceans and amphibians usually occurring.

The first experiences performed in the new resource suggest that subterranean laboratories, if appropriately conceived, may represent sustainable facilities thanks to their low energetic requirements and their strong potential in integrating research and education.

Keywords

salamander; laboratory; stygobiont; cave;

Presenting author

Raoul Manenti

Presented at

25th International Conference on Subterranean Biology (Cluj-Napoca, 18-22 July 2022)

Conflicts of interest