Living on gypsum soils: a challenge for plants and an opportunity for ecologists

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Plants specialized on special soils has intrigued naturalists from the earliest times of Biology. Under the umbrella of Gypworld, we are trying to unveil some of the critical questions that remain in relation to the origin and adaptations achieved by gypsum soil specialists all around the World. Although we are completing the huge puzzle we have in front of us, several issues related to the evolution of these plants and the problems that the climatic emergency are posing on the table, need a profound review.

For instance, our current theoretical framework on microevolution suggest that specialization may be reducing the necessary adaptive flexibility for facing new climatic scenarios. If true, these plants will have almost no chance for persist in these oncoming conditions, simply because their specialization has limited their adaptive flexibility.

However, recent evidences suggest an incredible phenotypic plasticity and even rapid evolution which could safeguard these plants for local extinction.

Here, we will try to shed light on this apparent paradox and to discuss how ecoevolutionary dynamics can help to withstand Global Change.