The flora and vegetation of rocky outcrops in three municipalities in the northern region of Ceará, Brazil: phytosociological characterization

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This study aims to identify the flora and vegetation of rocky outcrops of low altitude and confined in the municipalities of Sobral, Groaíras and Santa Quitéria (Ceará state, Brazil), to propose a phytosociological classification for the xerophilous communities. We selected five stations in areas with high proportion of bare rock (> 80%), and the field work were conducted in March 2014 and 2015 respectively (3º 56' S and 40º 23' W, 4º 01' S and 40º 05' W, 4º 07'' S and 40º 08' W, 4º 09' S and 40º 09' W and 4º 03' S and 40º 00' W). Floristic relevés were made following the Braun-Blanquet classic sigmatist method. The minimum areas of the floristic relevés vary between 8 e 16 m². All the plant species growing in cracks, crevices and vegetation "spots" that can be found in these habitats were identified. The classification of the relevés was made through the *Twinspan*. The floristic list is composed of 89 species, distributed in 61 genera and 29 families. *Fabaceae* was the most representative in species richness, 20 species, followed by *Poaceae* (10 spp.), *Euphorbiaceae* (7 spp.) and *Convolvulaceae* (6 spp.). 22 Brazilian endemisms have been identified. Based in the phytosociological analysis and in the classification results we identified five groups and two communities can be clearly distinguished: community of *Pilosocereus gounellei* FA.C.Weber) Byles & Rowley and *Encholirium spectabile* Mart. ex Schult. & Schult.f. and the community of *Crateva tapia* L. and *Combretum leprosum* Mart..

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