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Subnival habitats of the Central Caucasus represent typical rocky environments with very sparse soil cover and patchy vegetation. We studied how plant species spatial distribution in a subnival habitat (alpine-nival ecotone) depends on the size of rock particles. As a first step we described the climate (mean air temperature and annual precipitation) at two sampling areas, Mt. Tetnuldi (43°01'49.9"N, 42°55'36.0"E) and Mt. Kazbegi (42°39'46.87"N; 44°33'12.87"E), at elevations of 3000 to 3100 m a. s. l. The major climatic characteristics of these two sampling areas were similar and the minor differences in them should not affect measurably the relationships between substrate coarse fragments and plant species distributions.

We categorized rock particles in following size classes (soil; 0.2-0.6cm; 0.6-2cm; 2-6cm; 6-20cm; 20-60cm).We found that large-sized rock particles (6-20cm; 20-60cm) prevailed on the surface, the

largest class of 20-60cm was in a strong negative correlation with smaller classes (0.2-0.6cm, 0.6-2cm and 2-6cm), but correlation was insignificant between the large fragments(classes of 6-20cm and 20-60cm) and the soil.

We also examined how plant species associated with the rock particles of different sizes using Canonical Correspondence Analysis (CCA). Overall, we recorded 58 species, out of which 31 species were frequent (>10) and were used in the CCA. Some plant species showed a clear preference to large rock fragments while other associated clearly with soil; in particular, Tephroseris karjaginii, Ziziphora puschkinii, Festuca supina, Minuartia inamoena and Saxifraga juniperifolia tended to colonise a substrate with large fragments (20-60cm), Senecio sosnowskyi and Ziziphora subnivalis showed certain affinity to rock fragment size of 6-20cm, while Carex tristis and Sibbaldia parviflorum prefered soil substratum. We found that, while large-sized rock particles (6-20cm; 20-60cm) prevailed on the surface, most plants were associated with relatively rare fine-grained substrata and, to a lesser extent, with even rarer soil-covered spots. Our results show that the differential preference of species for certain sizes of rock particles observed in our study can conform well to the patchy pattern of vegetation typical for subnival habitats: many species that prefer a fine-grained substratum might clump together at such fine-grained spots and form the patches of associated plants provided there are facilitative interactions among them; the species that prefer coarser-grained substrata might establish as solitary plants outside of the patches.