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Abstracts & Excursion Guides

Edited by
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Excursion Guides
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retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, theatrical,
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publisher.
capacity was increased. The combination of vegetative plant height, life cycle, leaf dry matter content, pollination mode and specific leaf area provided the best prediction for species response to succession. It is concluded that plant traits can capture species response to vegetation succession after grazing extensification in Mediterranean rangelands.

**Heavy metal transfer to forage material in amended soils in the area of Ptolemais – Greece**

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A study of Se, Cd, Ni and Cr uptake by plants, conducted in the reclaimed mine soils of the Ptolemais basin, in North Greece, is reported in this paper. The aim was to estimate the influence of various soil parameters on the concentration of these elements in two plant categories, namely winter cereals and forage species. The results of elemental analysis indicated that the values of Cd, Ni and Cr were much higher than those present in regular soils. The values of bio-available Se in soils were low (< 7.9 ppb), well within the range of regular soils, while they were significantly higher in both plant categories (55-117.5 ppb). Results of multiple and stepwise regression analysis were used to develop models with high R² (0.82) of predicting Se uptake by plants using easily measured soil parameters such as pH, CEC, EC, clay percentage or manganium. The results can be utilized by various local users and land managers, and also to optimize management of grazing livestock and improve their nutrition.

**A study of the effect of areal fragmentation on the population status of Iris pumila L. in Ukraine**

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Our goal was to investigate the effect of isolation on populations of Iris pumila L., a typical Ukrain-
nian steppe xerophyte which areal has been split into a multitude of small fragments. Most of the studied populations clearly demonstrate prevalence of generative specimens. Seedlings are rare, which can be explained by drought during major parts of the vegetative seasons, the substantial matting of local soil, and human impacts, such as burning. Population success appears to depend on the size of the steppe fragment and the total human impact. In this preliminary genetic study of a relatively large Iris pumilia population fragment we did not detect any signs of gene pool depletion in the population. Further research will hopefully reveal whether the genetic indices we estimated also hold for other populations of the species—fragments of the once continuous areal. Meanwhile, due to the increasingly endangered status of the growth locations and the practical absence of any population status monitoring, it makes sense to consider the inclusion of this species into the Ukrainian Red List.

**Population ageing or prolonged adverse environmental effects**

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Currently, most Ukrainian steppe perennials are endangered due to areal fragmentation by tilling and as an invisible horrid aftermath of human activity. The net effect of these factors on the once continuous populations remains practically unexplored. Assessment of this effect requires years of painstaking monitoring of model populations. We have been studying Pulsatilla pratensis L. populations on an annual basis in the meadow-steppe belt of the Lysa Hill tract (Kyiv) since 2000. This population is completely isolated from other populations of the species and throughout the study has consisted of separate loci formed almost exclusively by mature generative caudex beds. Besides, solitary plants happen at times in the tract that also are of generative age and likely witness successful generative rejuvenation during some years. Outgrowth of generative-age caudex beds is accompanied by intensifying manifestations of senility, i.e. higher proportions of withered foliage, rudimentary buds, warped leaves, etc. We registered almost no seed renewal and thus no restocking with juvenile plants. Nonetheless, are these observations unambiguously proving the population's ageing? As the population has simultaneously been under the impact of adverse factors, especially the spring burning which kills tillers and juvenile plants, and annual harvesting of up to 90% of flowers. The combined effect of both factors has almost whittled away renewal from seeds, and the number of caudex beds is only increasing via partitioning of the existing ones. To definitively answer the question whether the population is ageing and the observed deviations and limited renewal are linked to senescence, we need to study its genetic diversity in a search for possible signs of an inbreeding depression. Otherwise, all the observed symptoms could also be explained by many years of adverse environmental effects. In case the latter option is true, we presume that elimination of these influences would perhaps lead to the population recovery, with resumed generative proliferation and population expanse.